



Notebook System Level 1

Training Material

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HEART OF TECHNOLOGY



Overview

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- n Chapter 2 Customer Induced Damage (CID) Criteria**
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- n Chapter 7.2 Test in FreeDOS**
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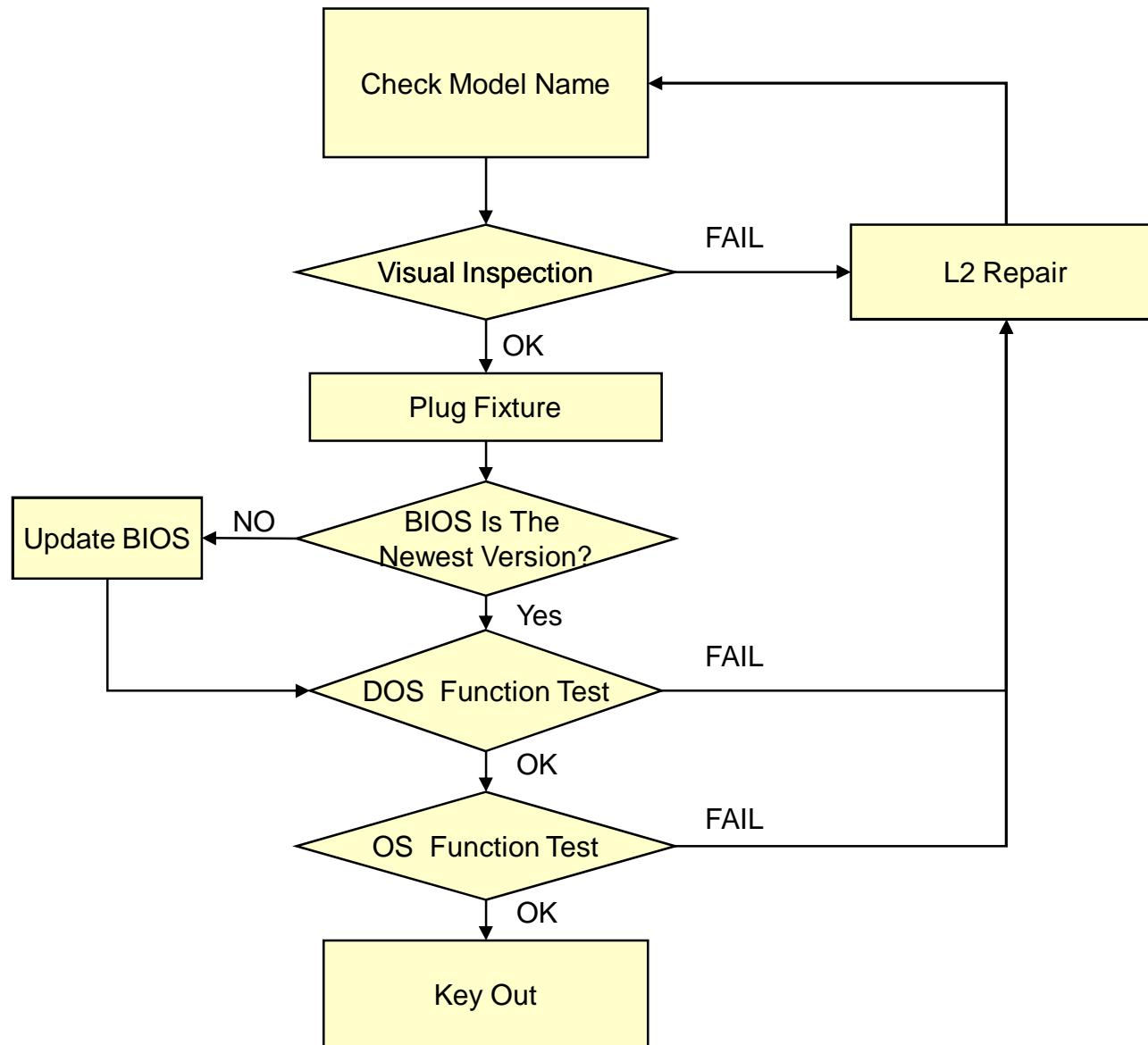


Chapter 1

Test flow chart



Test flow chart





Chapter 2

Customer Induced Damage (CID) Criteria



Content

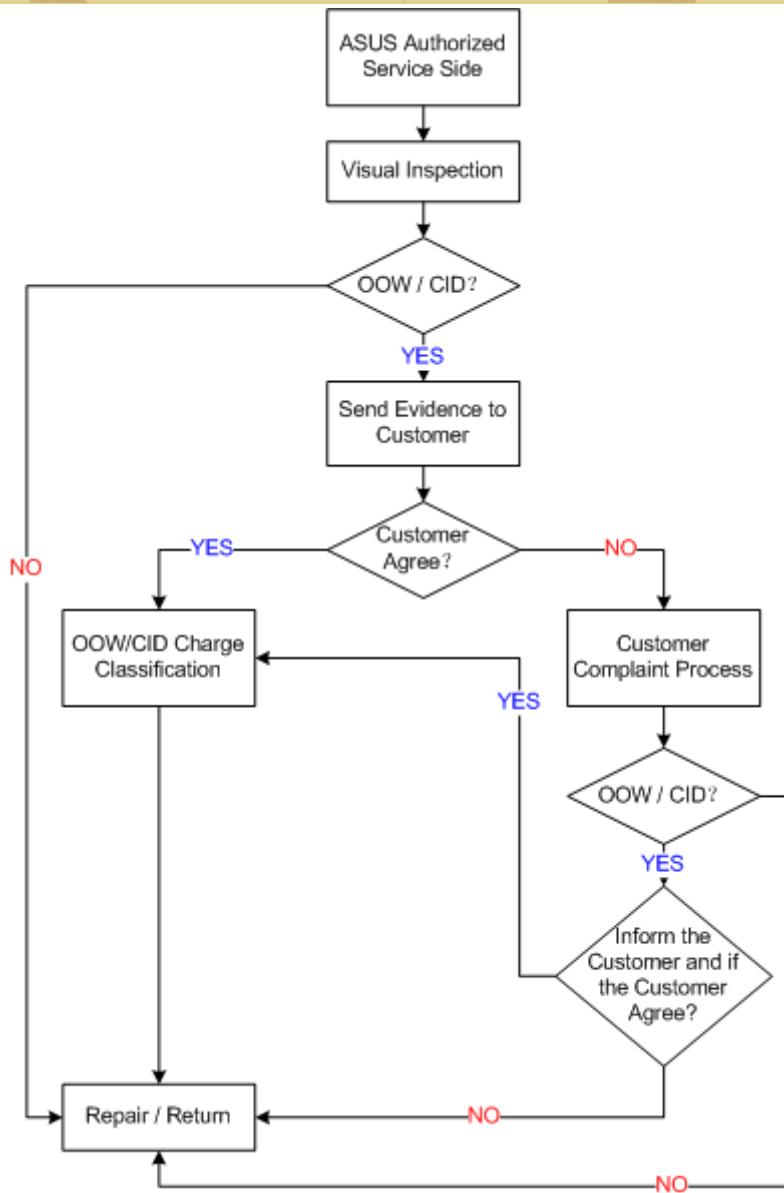
Ø CID & OOW(Out of Warranty) Service Process Flow Chart

Ø CID Outline

- **Surface**
- **Keyboard**
- **Adapter**
- **Mouse**
- **ODD**
- **LCD**
- **Machine**

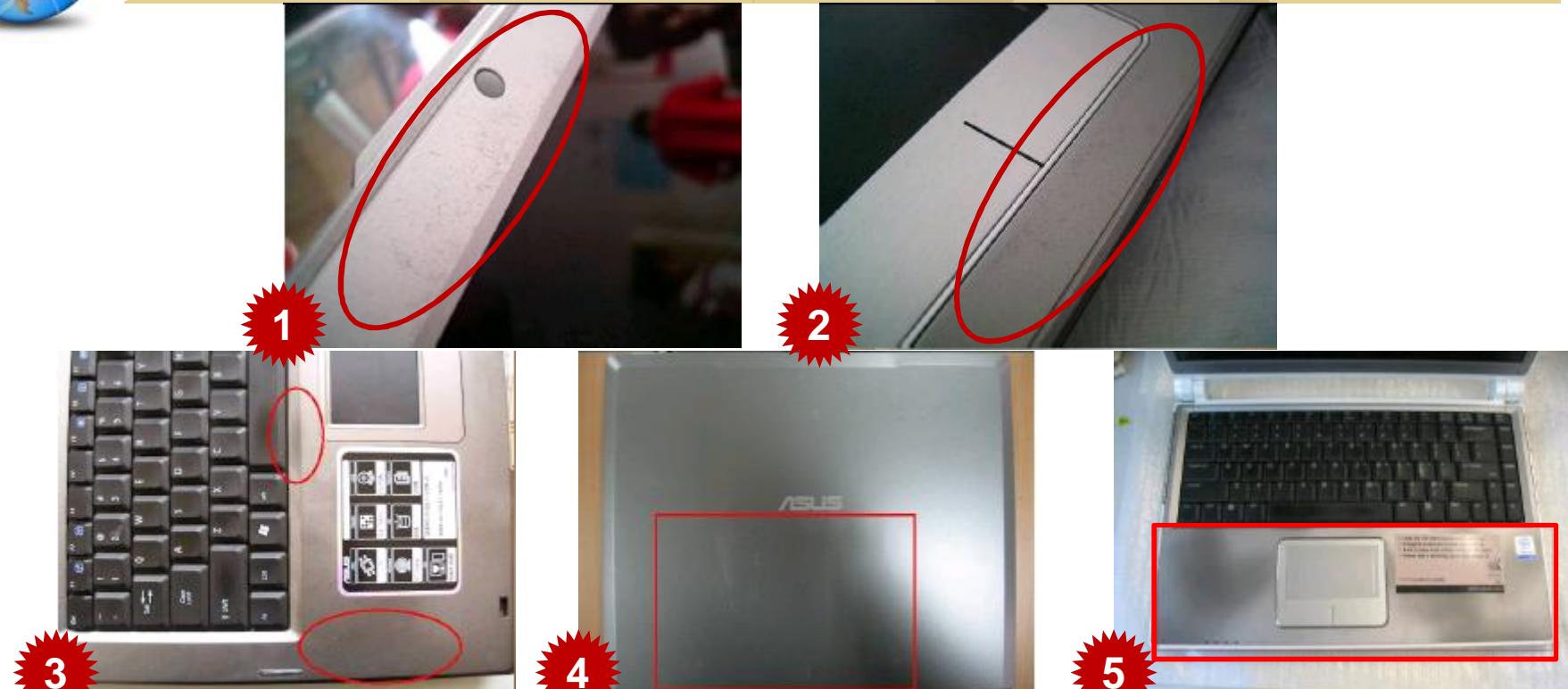


CID&OOW Service Process Flow Chart





Surface – Painting Peel Off



Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Painting peel off [Figure1-5]	LCD bezel or top case worn or painting peel off	Exchange or thicken the rubber	-	Free	Free
	-	Exchange related parts	Charge	Charge	Charge
	LCD cover or bottom case worn or painting peel off	-	Exchange related parts	Charge	Charge



Surface - Broken



Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Broken [Figure 6-14]	Not caused by hit or dropped	TBD	-	-	-
	Caused by hit or dropped or customer induced	Exchange related parts	-	Charge	Charge



Surface - Broken





Keyboard



Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Keycap drop off [Figure 15]	Keycap drop off (including its bracket)	Reinstall	-	Free	Free
		-	Exchange the keyboard	Charge	Charge



Keyboard - Oxidation



16

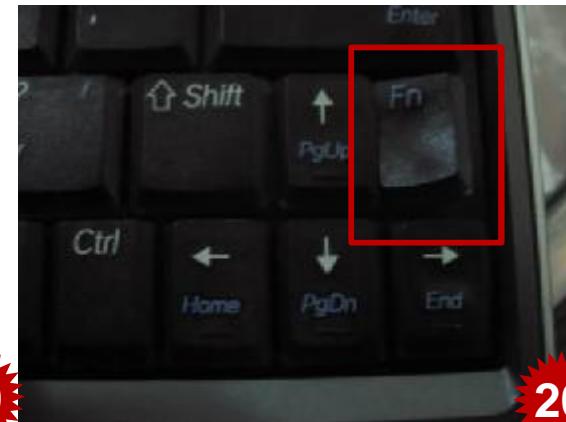


17

Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Keyboard Oxidation [Figure 16-17]	Liquid soak into the keyboard and the top case.	-	Exchange the parts which was soaked by the liquid	Charge	Charge



Keyboard - Broken



Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Keycap Twist [Figure 18-20]	Keycap twisted heated by the outside	-	Exchange the keyboard	Charge	Charge
	Keycap twisted by other reasons	TBD	-	-	-



Keyboard / Touch Pad Abraded



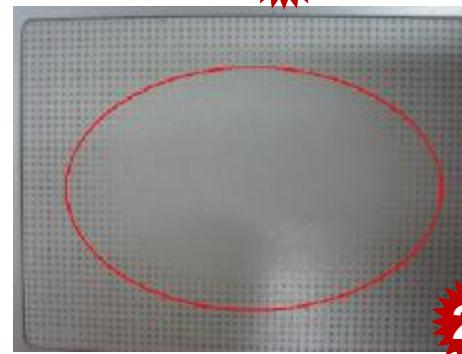
21



22



23

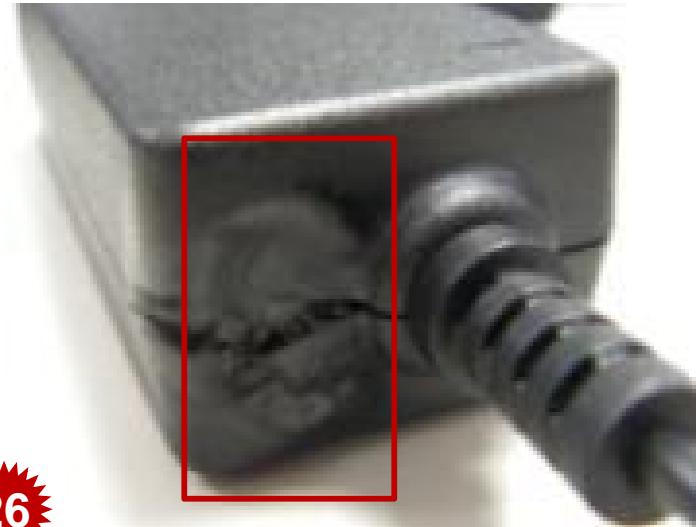


24

Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Keyboard or Touch Pad abraded [Figure 21-24]	Keyboard or Touch Pad was polished by the abrasion.	-	Exchange the keyboard or Touch Pad	Charge	Charge
	The sign on the keyboard or Touch Pad was drop off	-	Exchange the keyboard or Touch Pad	Charge	Charge



Adapter – Surface Damaged



Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Adapter surface damaged [Figure 25-26]	Adapter surface has water mark or melted or broken.	-	Exchange the adapter	Charge	Charge



Adapter – Cable Damaged

27



28



29



30



Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Adapter Cable damaged [Figure 27-30]	Cable broken and the plastic outside abraded	-	Exchange the adapter	Charge	Charge



Adapter – Label Damaged



Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Adapter label damaged [Figure 31]	Label removed, scribbled or damaged seriously	-	Exchange the adapter	Charge	Charge



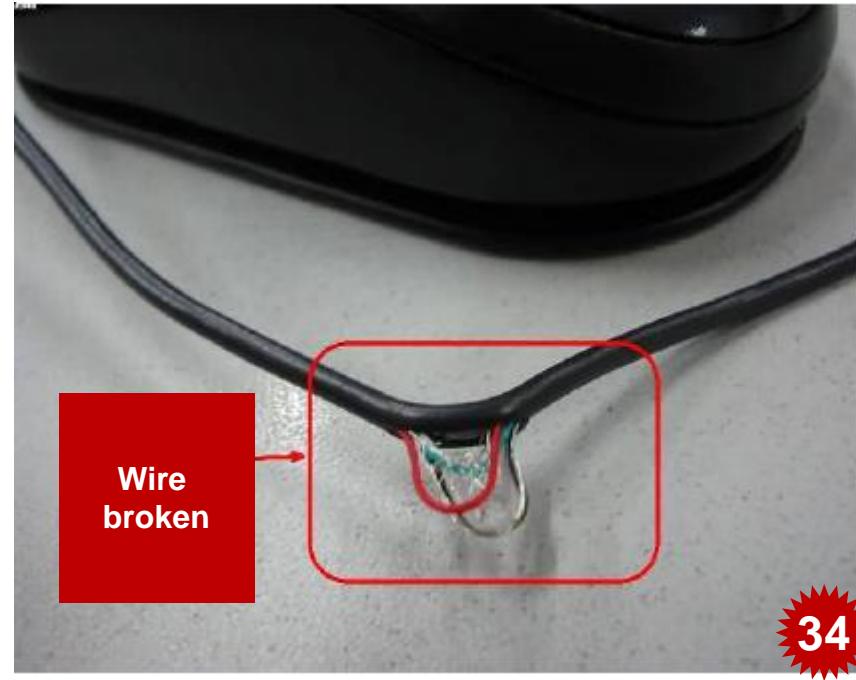
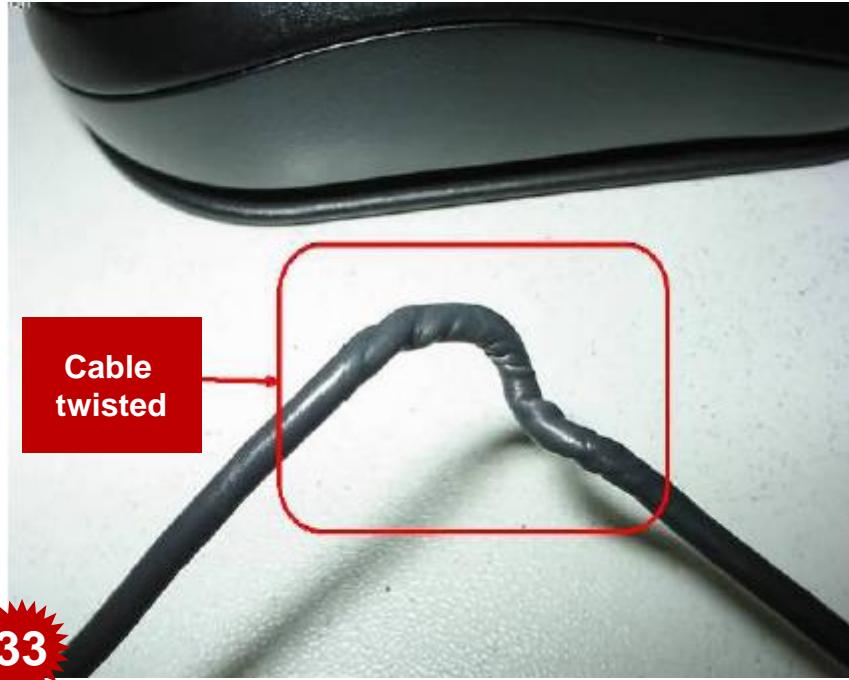
Mouse – Surface Damaged



Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Surface Damaged [Figure 32]	The surface of the mouse split or damaged.	-	Exchange the mouse	Charge	Charge



Mouse – Cable damaged



Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Cable Damaged [Figure 33-34]	Cable twisted or wire broken	-	Exchange the mouse	Charge	Charge



Mouse – Label Damaged



Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Label Damaged [Figure 35-36]	Label tear up by customer or disassembled after damaged	-	Exchange the mouse	Charge	Charge



ODD – Mechanical Damaged



Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Mechanical Damaged [Figure 37]	The hook broken, damaged or missed so that the ODD couldn't read the disk.	-	Exchange the ODD	Charge	Charge

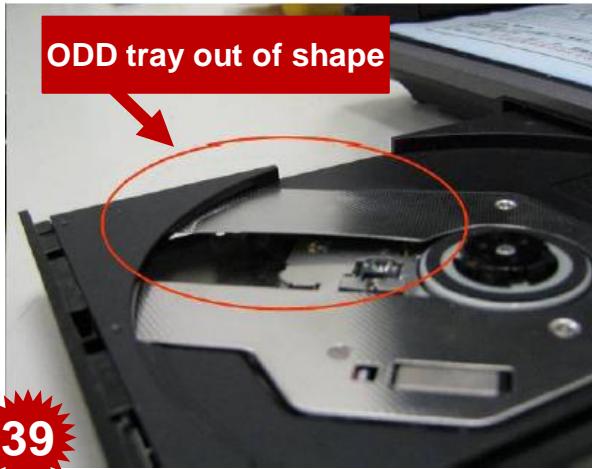


ODD – Mechanical Damaged



38

ODD bracket broken



39

ODD tray out of shape



40

Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Mechanical Damaged [Figure 38-40]	Includes: ODD bracket broken, ODD tray out of shape, data cable damaged, etc.	-	Exchange the ODD	Charge	Charge



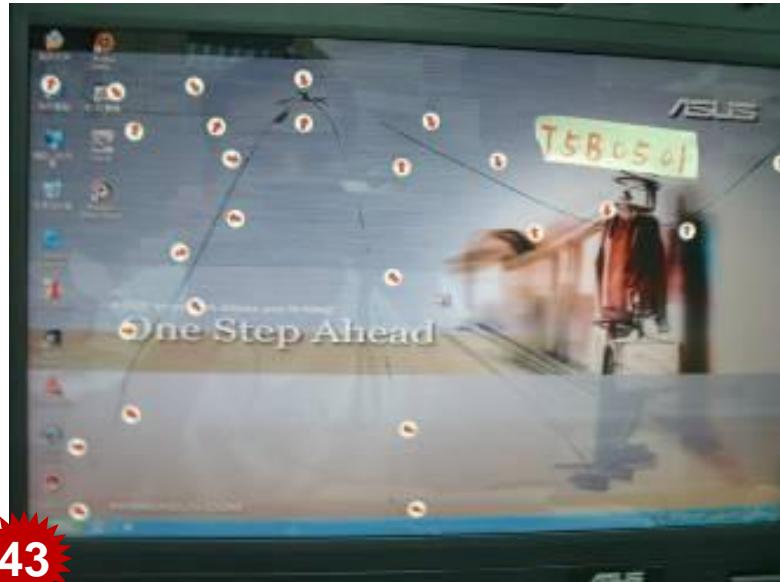
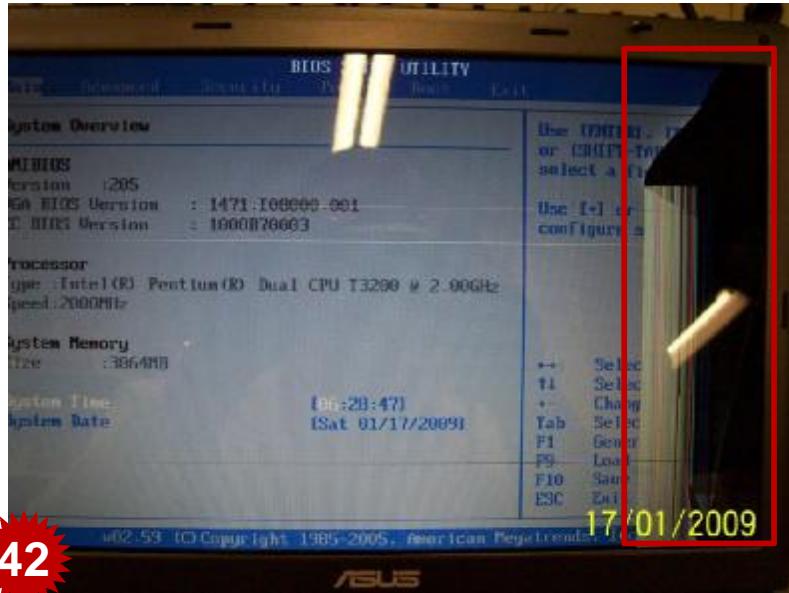
ODD



Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Separate from the main machine [Figure 41]	ODD separates from the main machine, data cable damaged	-	Exchange the ODD	Charge	Charge



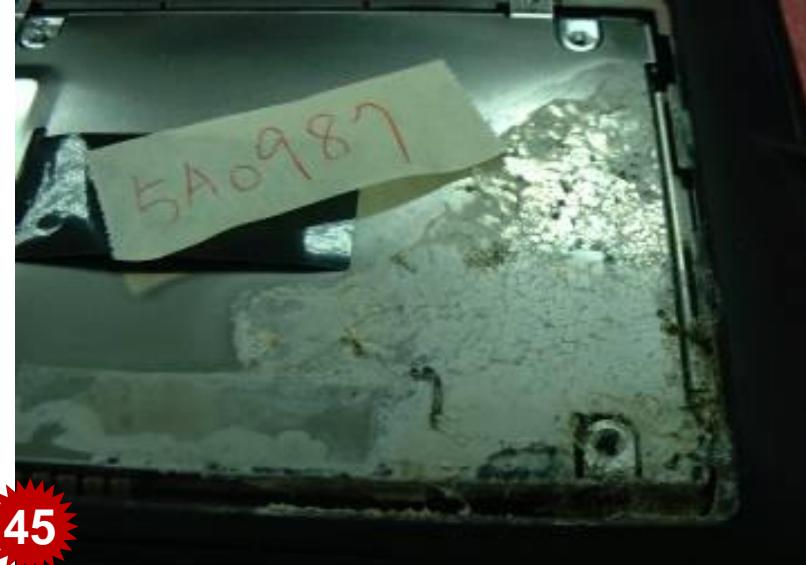
LCD



Damage	Comments	Repair Way	Charge
LCD Broken [Figure 42-43]	Panel crack and mural are considered caused by drop, press or misuse	Replace the panel	Yes



Machine Oxidation



Damage	Comments	Repair Way	Charge
Liquid inside [Figure 44-45]	<p>It may be caused by misuse, ex:</p> <ul style="list-style-type: none">(a) Customer try to self-repair and use wrong way to clean to get the oxygenation.(b) Splashed by liquid.	<p>Check other parts and complete function first.</p> <p>Replace the damage parts</p>	Yes



Machine Burned



46



47

Damage	Comments	Repair Way	Charge
NB Burned [Figure 46-47]	Require to check the cause of such case carefully and seriously. If unable to judge the endures responsibility, please feedback to ASUS HQ.	Replace the hole NB	TBD



Chapter 3

Pretest Fixture Package



ASUS Pretest Fixture Package

Part Number	Fixture Name	Amount	Photo
20-201400952	PCMCIA Test Fixture	1	
22-220000100	Y-Cable	1	
70-C1OG10-01	Com Port Test Fixture	1	
70-C1OO30-0	Printer Test Fixture	1	
16-000500007	Tools Package	1	



ASUS Pretest Fixture Package

Part Number	Fixture Name	Amount	Photo
22-060001280	Audio Test Fixture	1	
80-C1G036-0103	ENG_EZUSB Board v1.0	2	
60R-R00LA1000	LAN Loop Back	1	
80-C1G036-0301	ENG_EZUSB Board v2.0	4	
22-060000050	USB Cable	4	



ASUS Pretest Fixture Package

Part Number	Fixture Name	Amount	Photo
80-DH1000-16	SCB-2408U/MI/ASUS NB	1	
14-011000040	IEEE 1394 Cable	1	
14-000500500	MINI USB Cable	1	
04-267001510	Adapter10W AD620(US/JPN/TWN)	1	
20-521055550	CD-ROM Testing CD	1	



ASUS Pretest Fixture Package

Part Number	Fixture Name	Amount	Photo
20-J30320101	VGA Board Disassembly	1	
22-240000310	Screwdriver For S200	1	
04-266001000	NB Adapter (90W)	1	
04-266000500	NB Adapter (50W)	1	
14-110060370	Power Cord	2	



ASUS Pretest Fixture Package

Part Number	Fixture Name	Amount	Photo
	CRT/LCD Monitor	1	
20-T004C2304	Express Card	1	
20-521006264	SD Card	1	
20-T00371104	MS Pro Card	1	

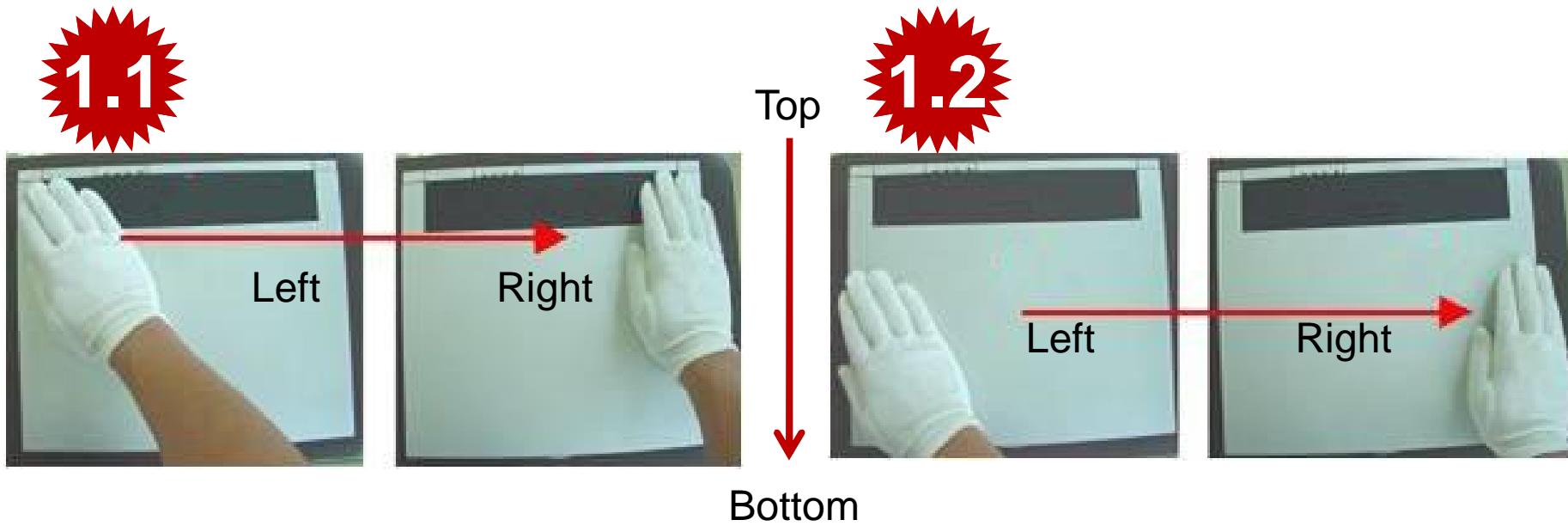


Chapter 4

Visual Inspection



Visual Inspection Manner



1. Method and sequence for appearance inspection

(1) Take down notes while reading:

While inspecting, the operator's focus need to follow by their hand.



Back Cover & Shake LCD

2.1



1. Check if the scratch, stain, paint, bright line of LCD cover are under inspection spec.
2. Tear LCD back cover Mylar.

2.2

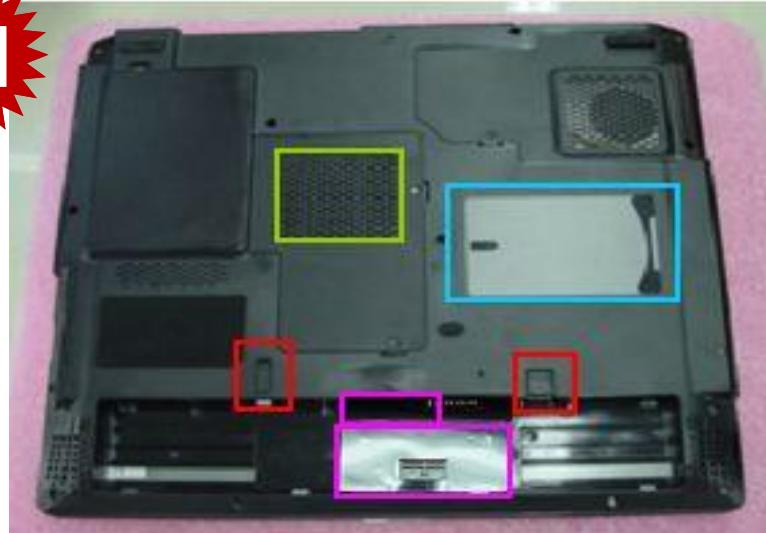


1. Shake LCD module 3 times to check if hinges have some noise.



Check Bottom Case

3.1



3.2



1. Checking if the gap in the bottom case is under spec.
2. Check bottom case appearance that scratch, stain, print, color different, spray paint defector others appearance need to tally with inspection standard.
3. Check battery latch function well.
4. Check hole of speaker and DDR door no foreign objects.
5. Check the top case Mylar and battery Mylar are on NB, can't permit they are oblique or loss.
6. Check business card folder is stick on bottom case(for ASUS A3 series)
7. Check if scratch, stain, print, bright line of bottom case are under inspection spec.



Check Border Area

4.1



1. Check if the scratch, stain, paint, bright line of front side are under inspection spec.
2. Don't tear bottom case IR lens Mylar.

4.2



1. Check if the scratch, stain, print, bright line of right side are under inspection spec.

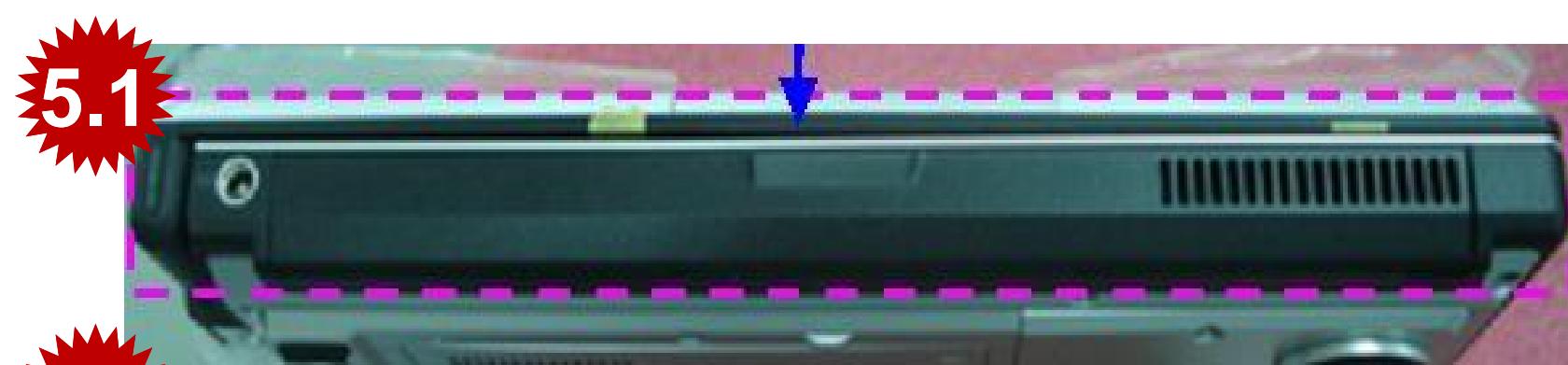
4.3



1. Check if the scratch, stain, paint, bright line of rear side are under inspection spec.
2. Tear LCD back cover Mylar.



Check Inside Cover



1. Check if the scratch, stain, paint, bright line of left side under inspection spec.
2. Checking if there is any foreign object inside each jack of NB left side.



Check Gap & Device

6.1



6.2



1. Checking if the gap between LCD module and top case is under spec.
2. Checking if the scratch or pant off on the NB front side is under spec.
3. Checking if there is any foreign object inside each jack of NB left side.



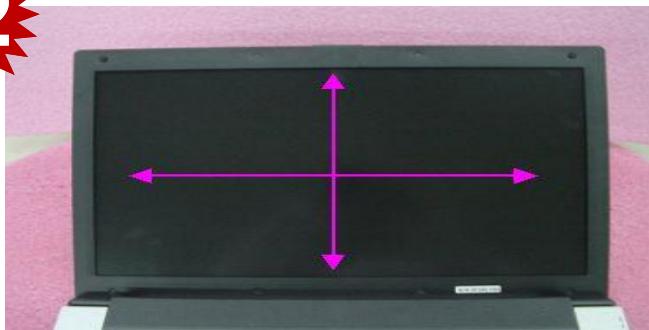
Check LCD Surface & Rubber

7.1



1. Confirm if there is scratch on the LCD panel.
2. Checking the gap between LCD panel and LCD bezel is under spec.
3. Confirm if LCD panel is glare.

7.2

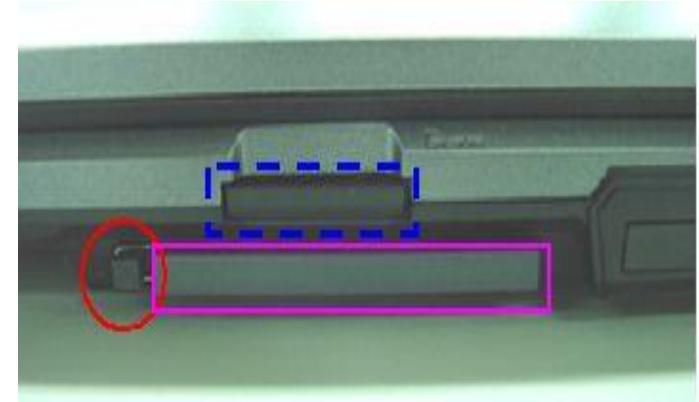


1. Confirm if there are 4 Mylar & 4 rubbers on the LCD bezel.
2. Check printing logo on LCD bezel.



Check PCMCIA & Top Case

8.1



1. Check if the PCMCIA push button function well.

8.2

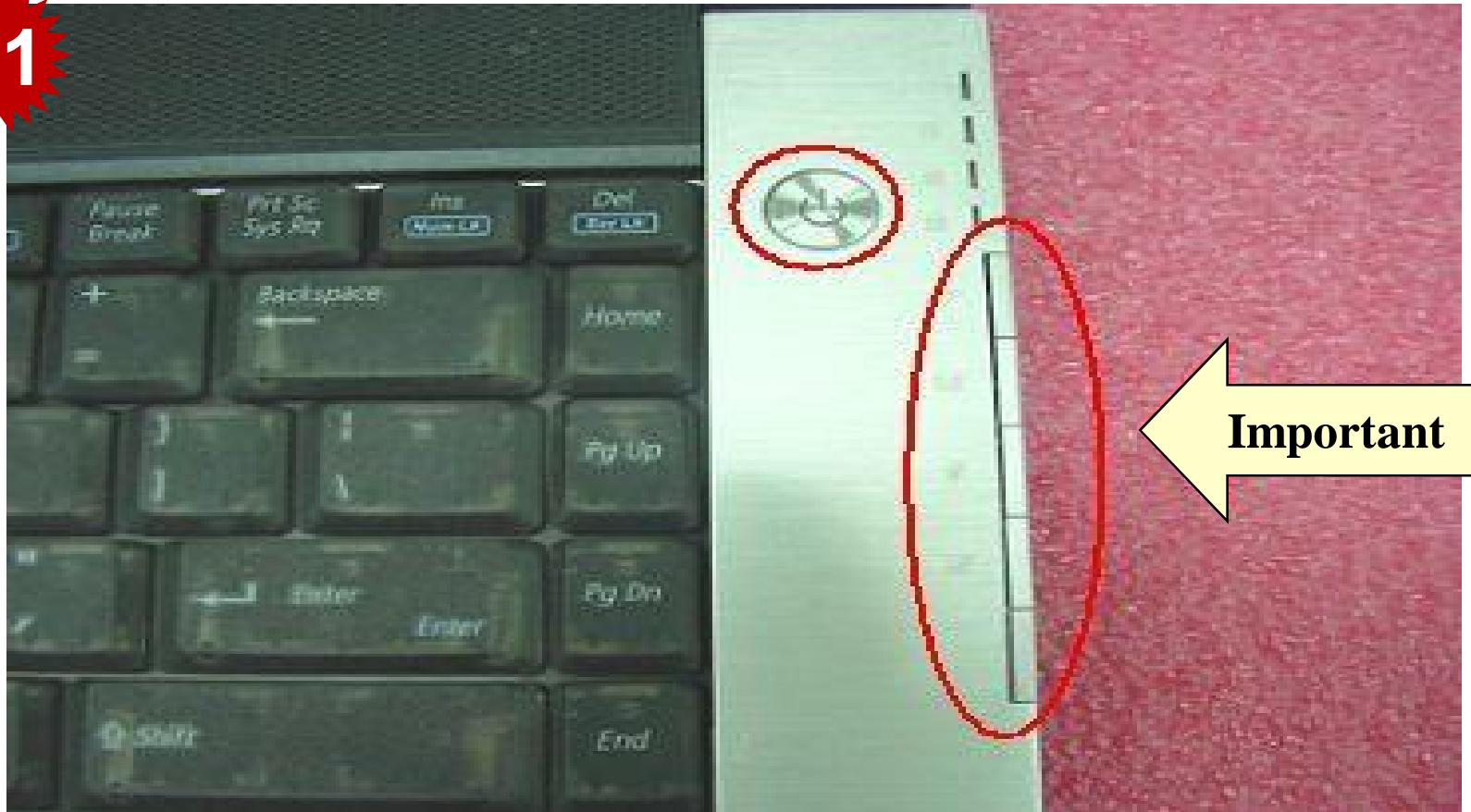


1. Checking if there are Windows, Intel inside label, ATI label, CSR label, TNT label, Dolby label, Spec label, Promotion label had stuck on the top case.



Check Function Button

9.1



1. Checking if the power button and fast key works smoothly. Checking if the gap, scratch, painting off, color difference or others surface defect of button are under standard.



Check Keyboard



1. Checking if the K/B right side cannot saw VAG thermal module.
2. Make sure K/B and K/B cover wedge in top case and GAP under spec.
3. Use the palm of both hands to hit lightly K/B and make sure key of K/B have not floating, missing, noise and moving.



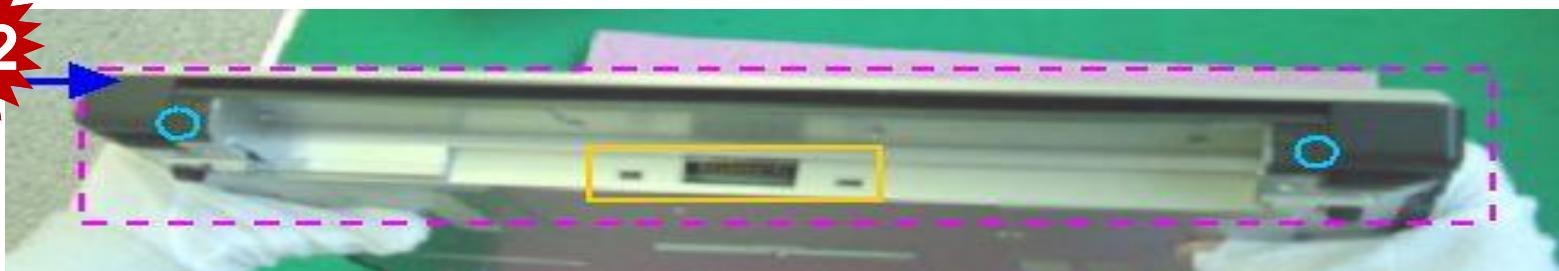
Check Bottom Case & Charge Pin

11.1



1. Checking if the gap, scratch, stain, painting off, color difference or others surface defect of bottom case are under standard.
2. Checking if the battery can slide smoothly and functioning.

11.2

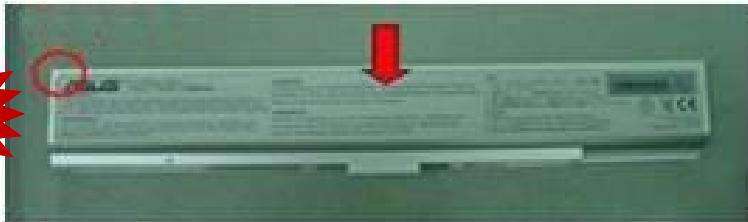


1. Checking the gap between hinge covers and top case are under spec.
2. Checking if the scratch or pant off on the NB back side is under spec.
3. Checking if there is any foreign object inside each jack of NB right side.
4. Checking if there are 2 screws Mylar in the bottom case.

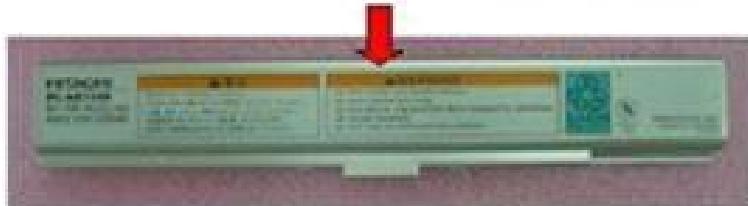


Check Battery & Warranty Label

12.1



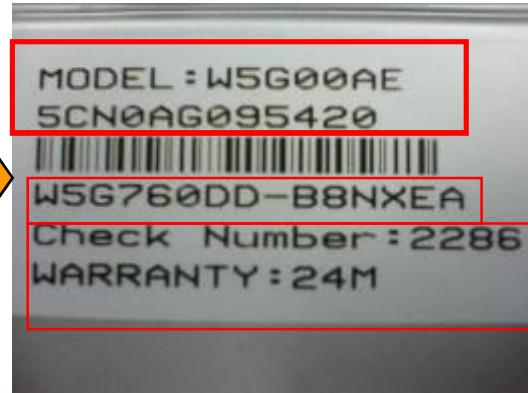
For ASUS



For
HITACHI(OEM)

Label cannot stuck over frame.

12.2



Check machine model
number Name EX:W5AE



Check All Label & Cotton Paper

13.1



1. Confirm that number of 90 S/N pasted on machine is the same with on traveling card on bottom case.
2. Take the label-checking Mask putting on bottom case.

13.2



Put a anti-dust on the keyboard.

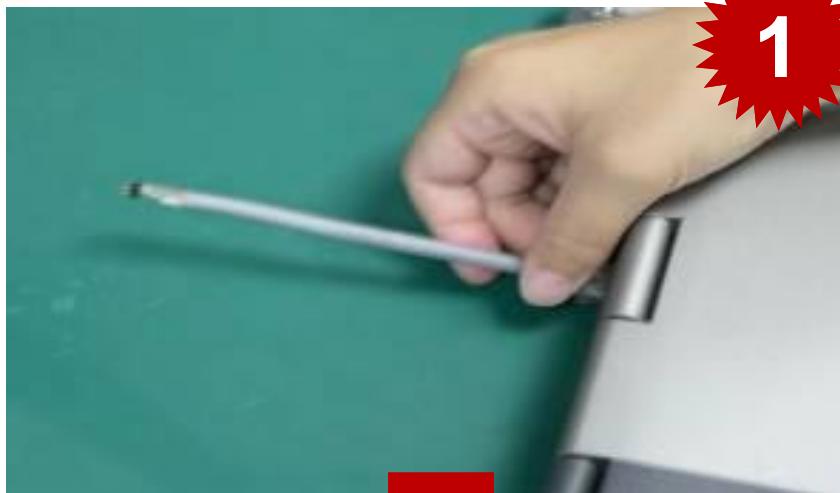


Chapter 5

Plug Fixture



Plug Fixture



1

1. Connect LAN Loop Back Plug



2

2. Put Test CD into ODD and reboot to run ASUS NB pretest programs



Plug Fixture



3. Connect USB port plug.



4. Connect MS PRO card plug.



Chapter 6

Updating BIOS



Content

- Flashing BIOS introduction
- Preparation
- Flashing BIOS in Operating System
- Flashing BIOS in DOS mode
- Flashing BIOS in BIOS setup utility
- Jig Board



Flashing BIOS Introduction

Updating BIOS could be the first option for the troubleshooting of the Notebook PC because the new BIOS revision will solve some problems. (Read the BIOS release information provided on the download site before using.)

Four ways to flashing BIOS:

Software:

1. Winflash in Operating System
2. Aflash in FREEDOS
3. Easy Flash in BIOS SETUP UTILITY

Hardware:

4. Jig Board

Warning:

Careless updating can result in your Notebook PC having more problems.



Preparation

Before starting flashing BIOS, please plug in the adapter so as to avoid the power off in the flashing process, which will lead to the BIOS flashing failure.





Flashing BIOS in Operating System



Precondition

Two preconditions mentioned before starting to update the BIOS in OS:

1. Download the exact BIOS files from the ASUS website
 - Before starting updating BIOS in OS, please verify the NB model then download the corresponded BIOS files from the ASUS website.
 - The BIOS file can be found in the website as below:
<http://www.asus.com>
2. Please ensure the updating program 'Winflash Utility' has been installed in your NB before you start BIOS updating.

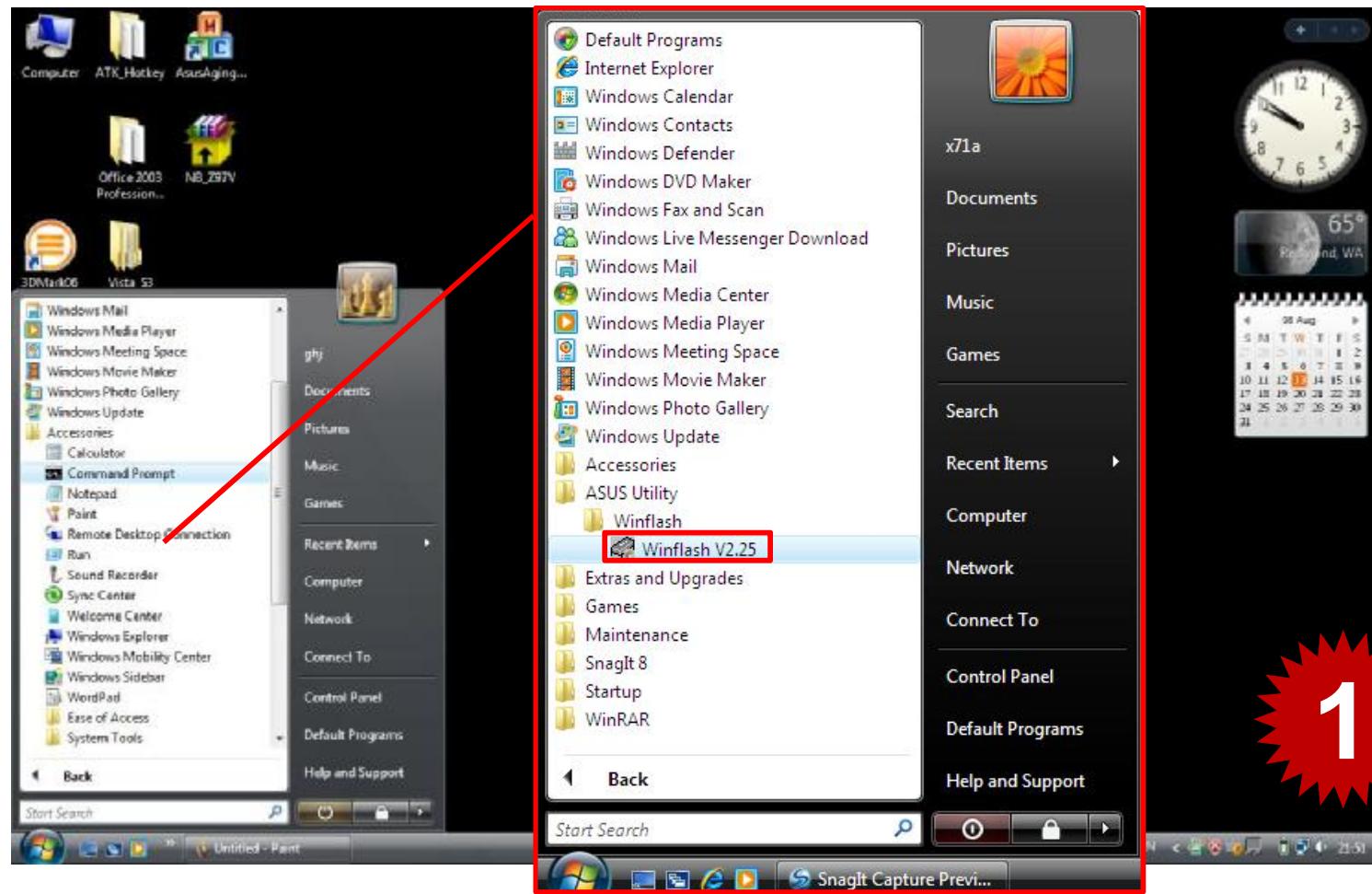
The program can be installed from the Driver & Utility CD.



Flashing BIOS in Operating System

1. Open the program “Winflash”

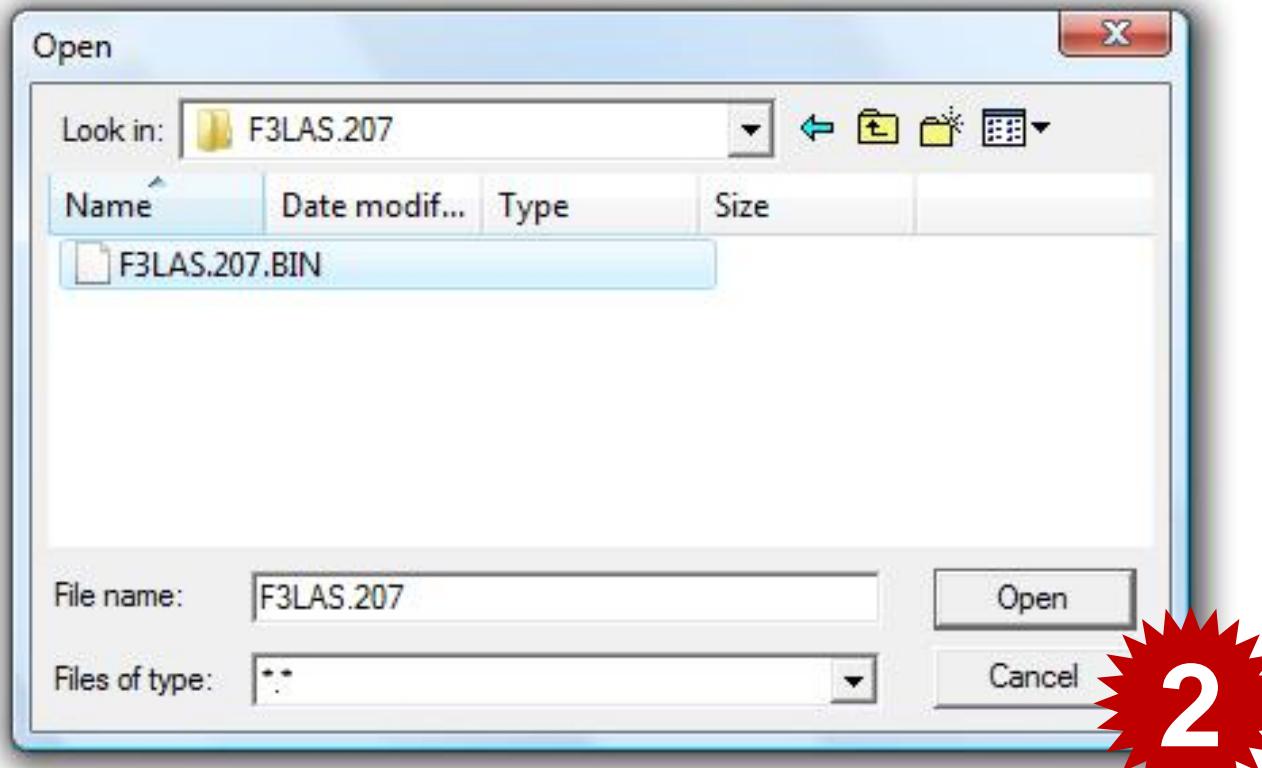
Click **Start\All Programs\ASUS Utility\Winflash\Winflash V2.25**





Flashing BIOS in Operating System

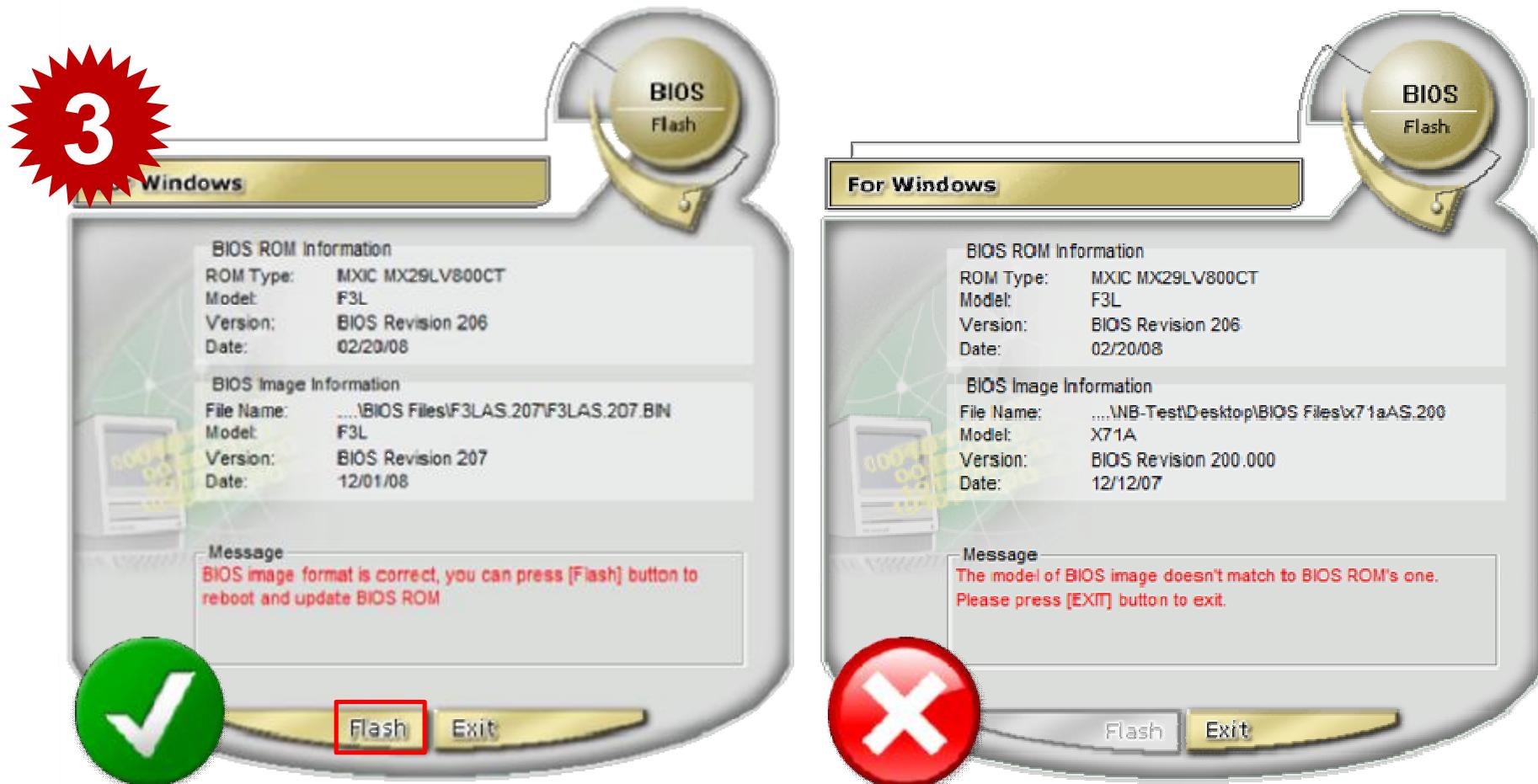
2. Select and open the BIOS files downloaded from the website.





Flashing BIOS in Operating System

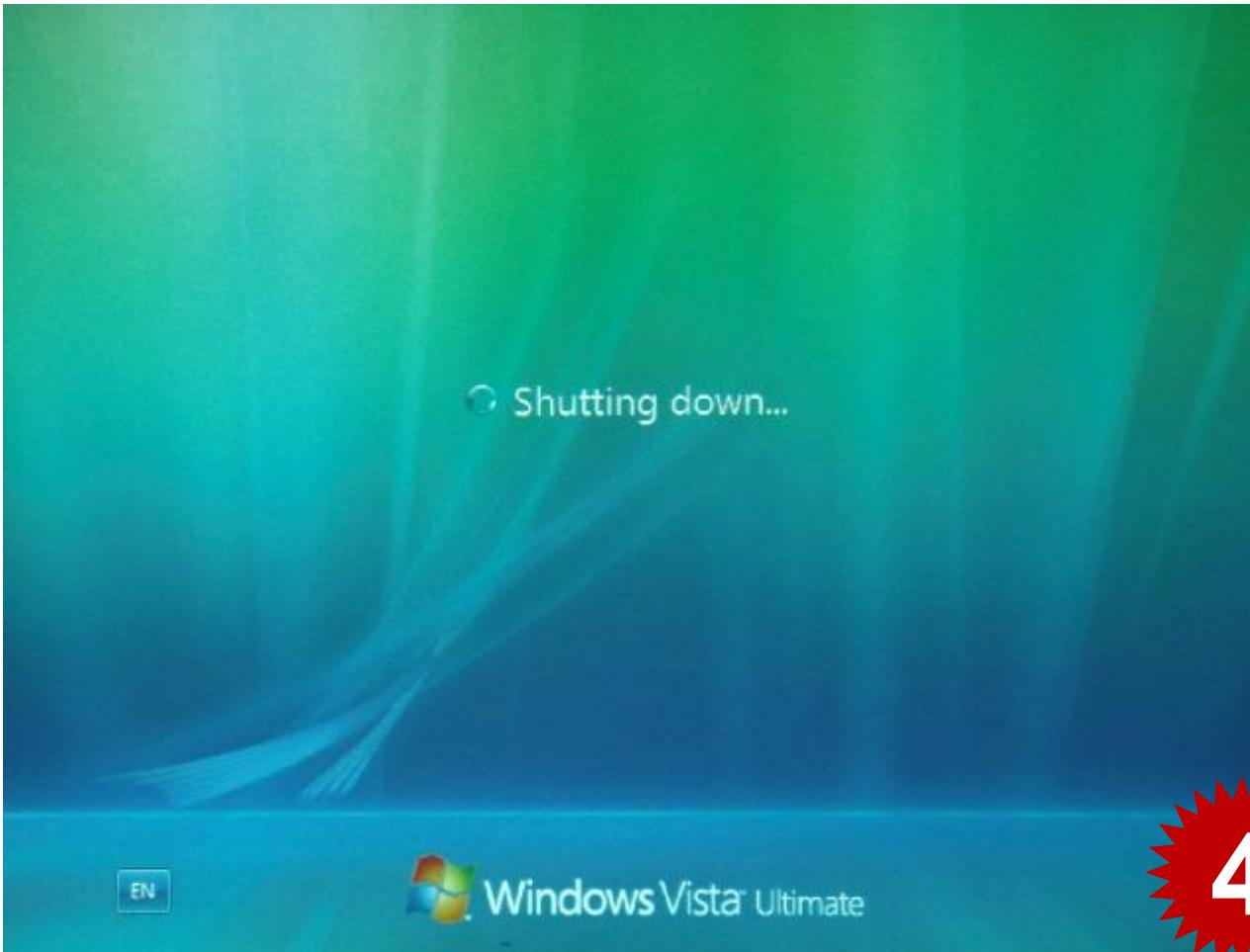
3. Confirm the BIOS information is correct and press “Flash” button to start.





Flashing BIOS in Operating System

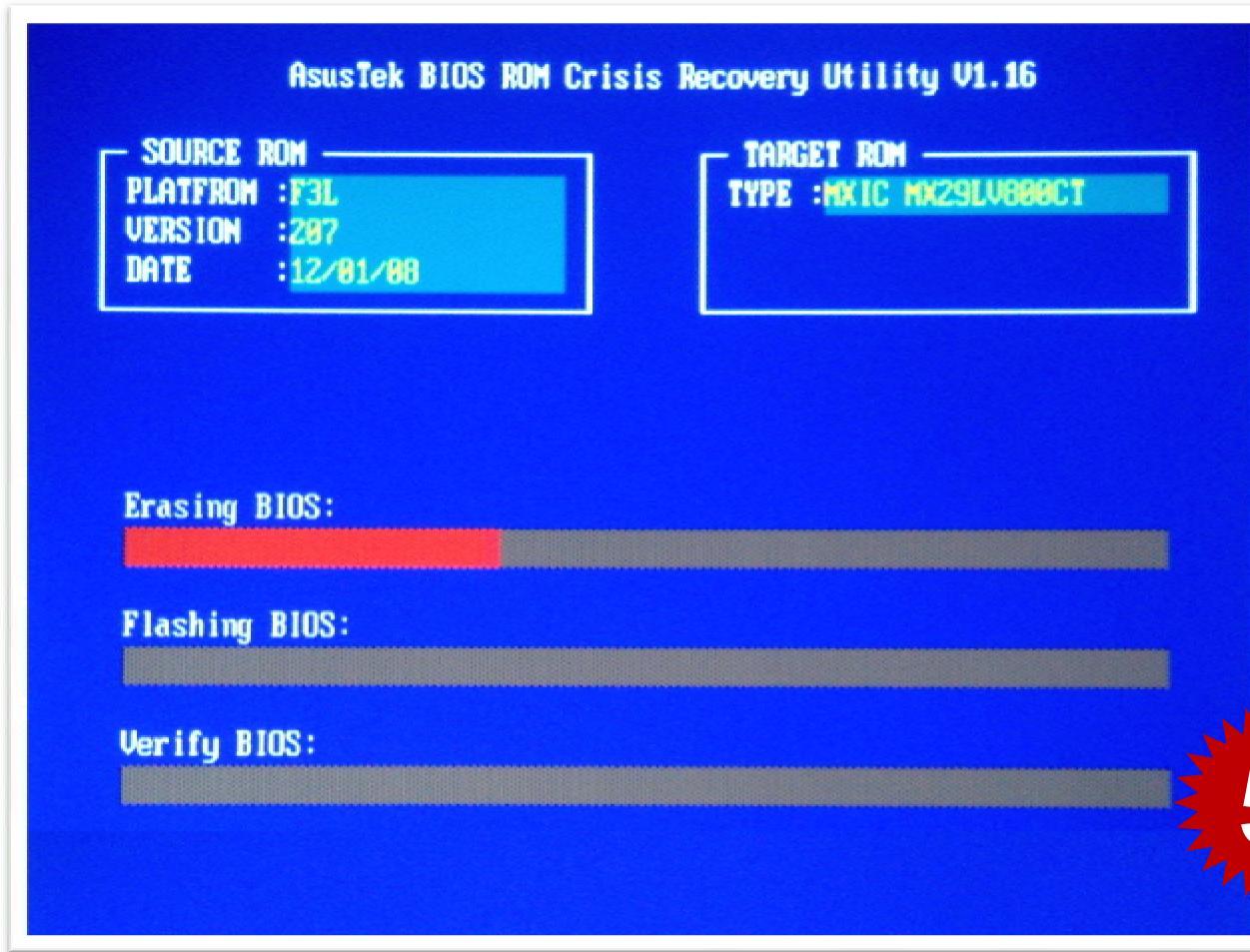
4. The system would shut down automatically and reboot again to enter the easy flash interface to start flashing the BIOS.





Flashing BIOS in Operating System

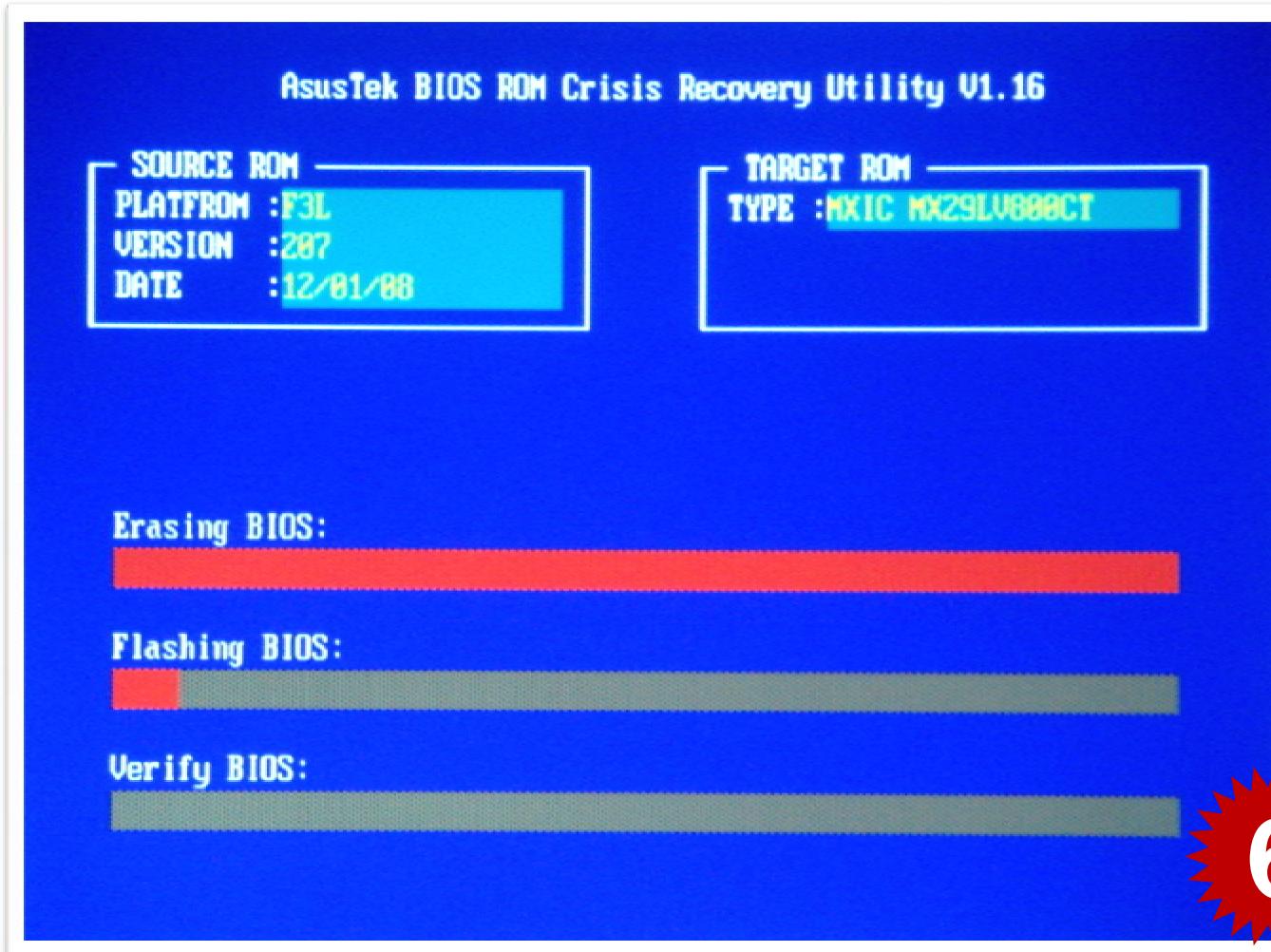
5. Erasing BIOS





Flashing BIOS in Operating System

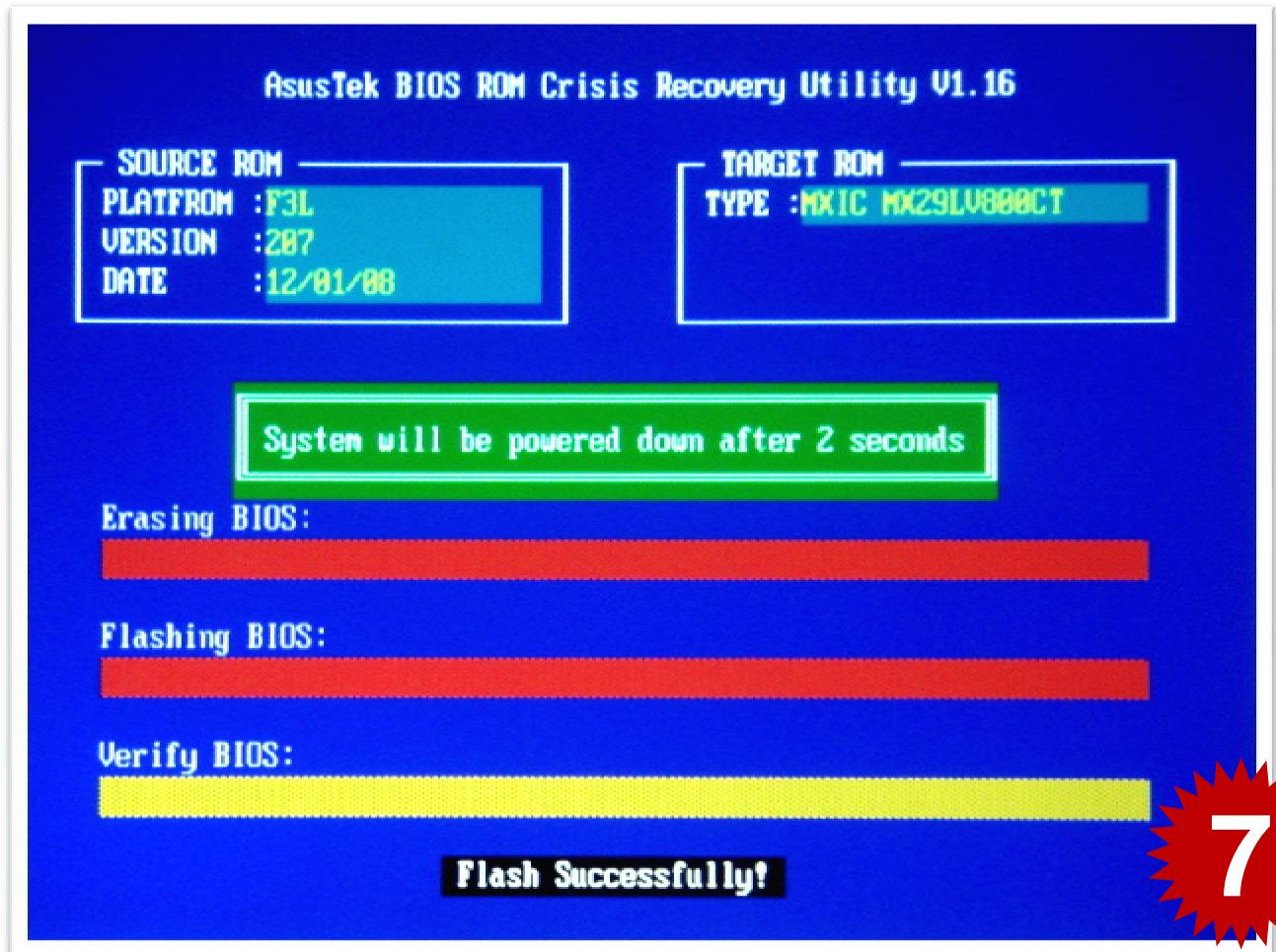
6. Flashing BIOS





Flashing BIOS in Operating System

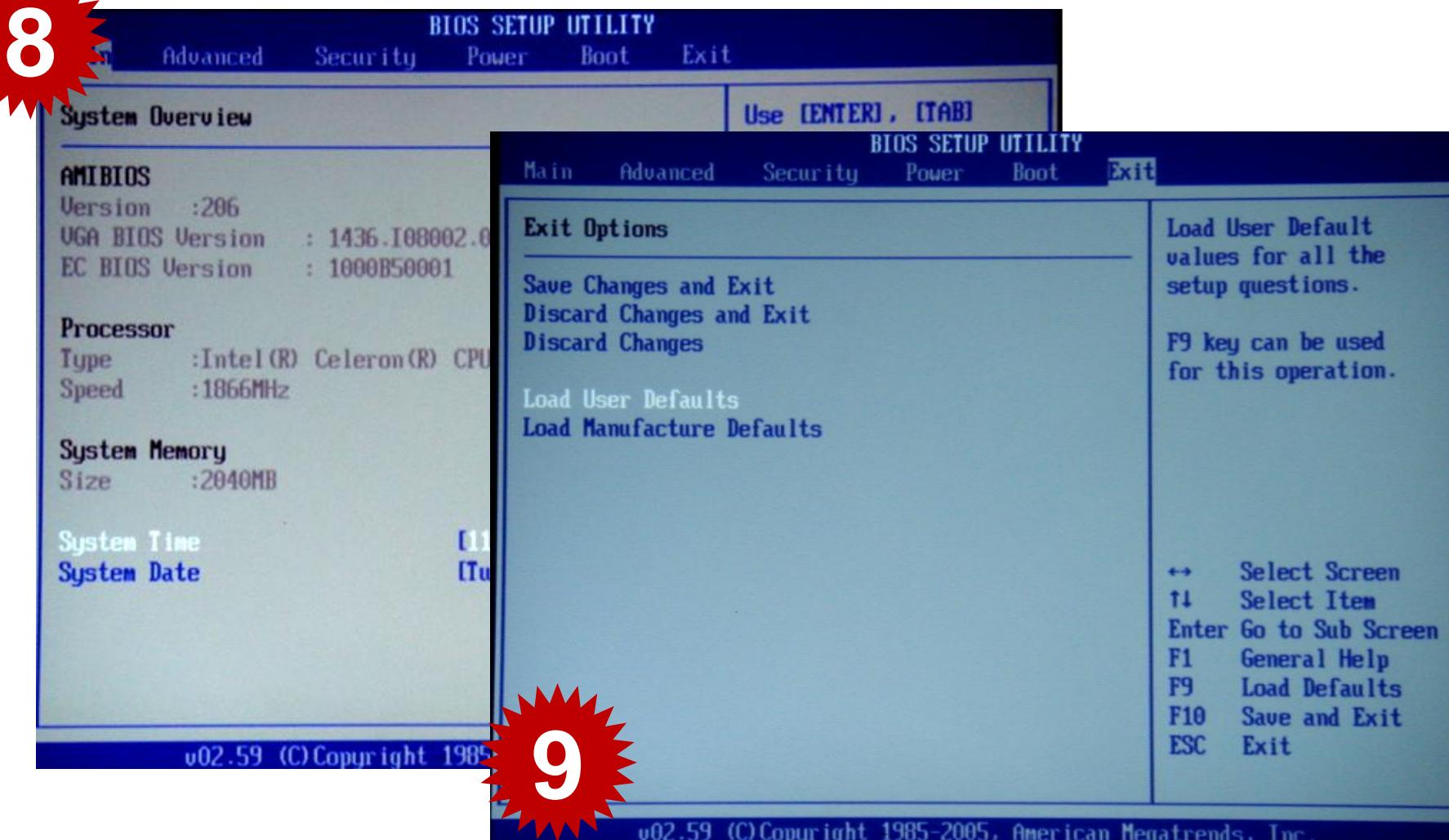
7. Verify BIOS. After flash successfully, the system would shut down automatically.





Flashing BIOS in Operating System

8. Please restart and enter the BIOS setup interface to **Load User Defaults**.





Warning



- The model is not matching
- The version is not the latest or older than the BIOS

In these two situations, the BIOS could not be updated. The message would show and the “Flash” button would not be activable.



Downgrade BIOS

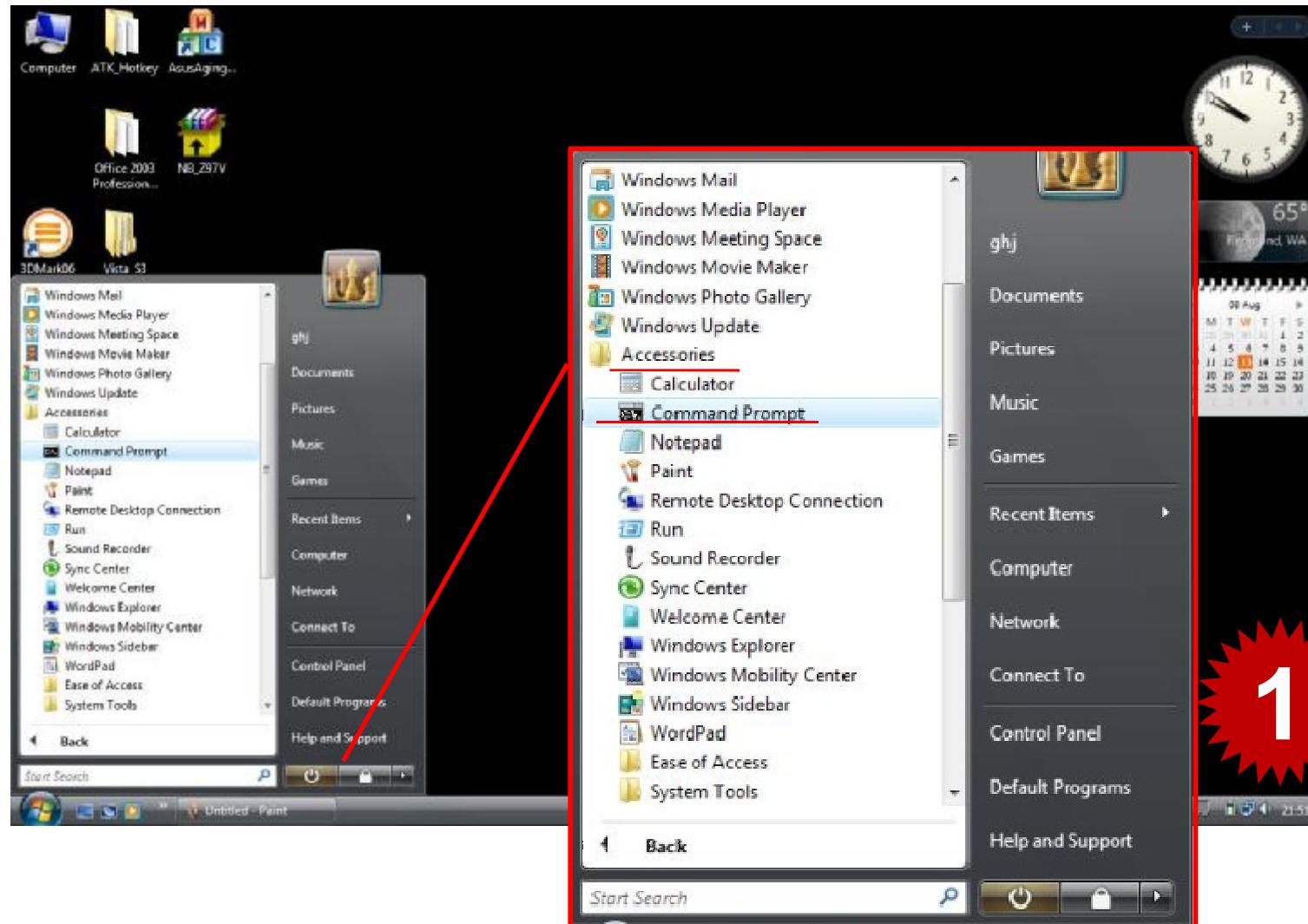
Description:

With the new version of the BIOS, some functions would be disabled. In this case, downgrade BIOS would be adapted. For the WINFLASH program could only upgrade BIOS, one command should be run before the downgrade.



Downgrade BIOS

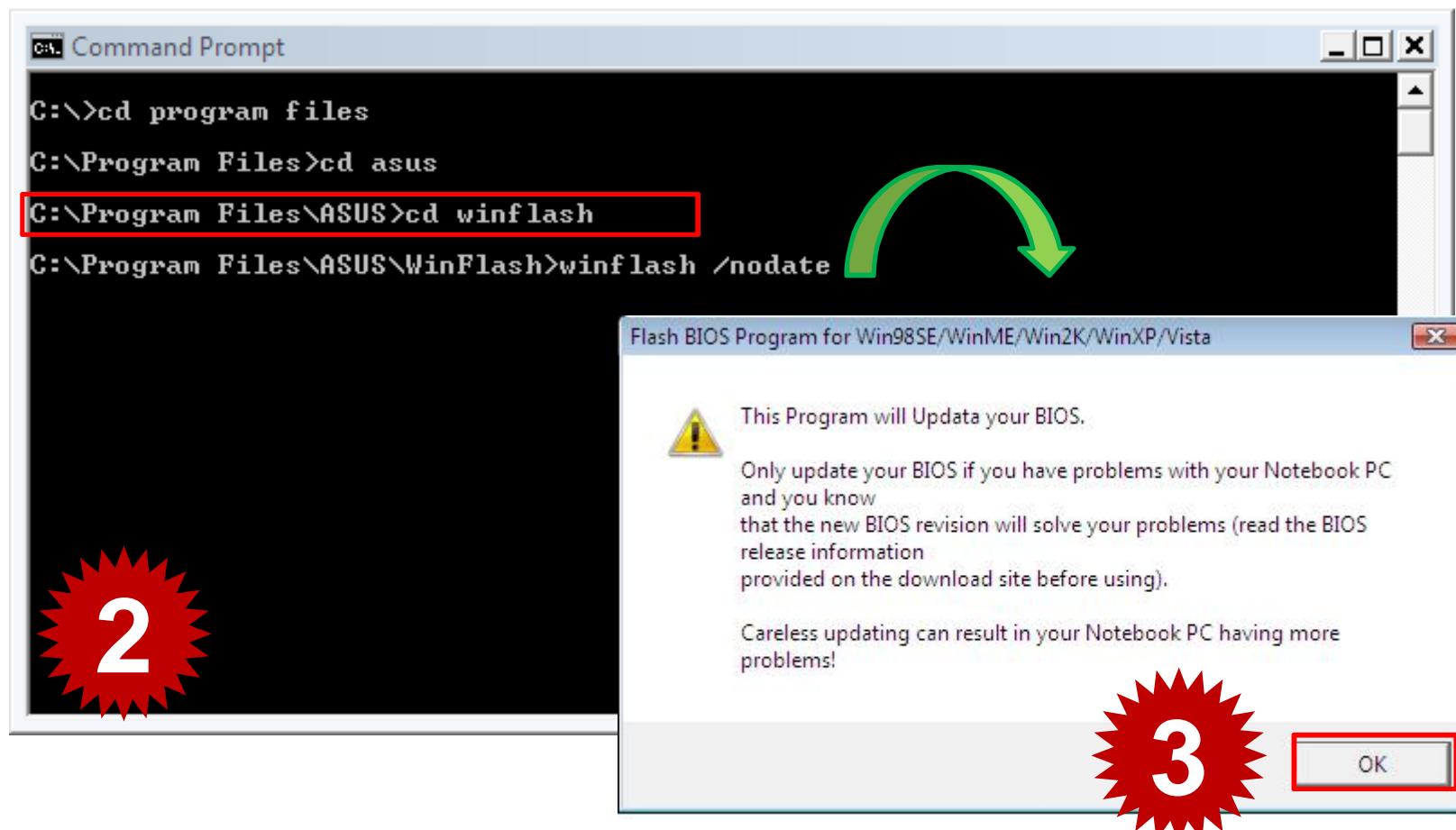
1. Enter into the DOS mode in OS





Downgrade BIOS

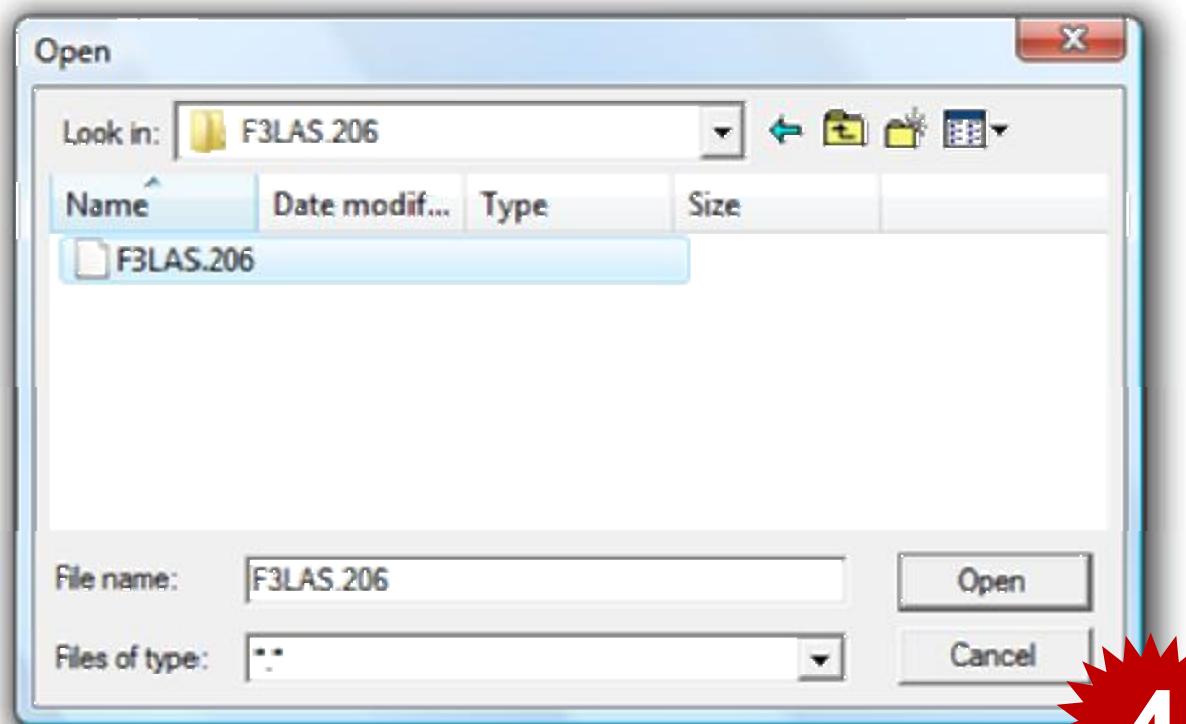
2. Run “winflash /nodate” in the DOS mode
(The path is as below)





Downgrade BIOS

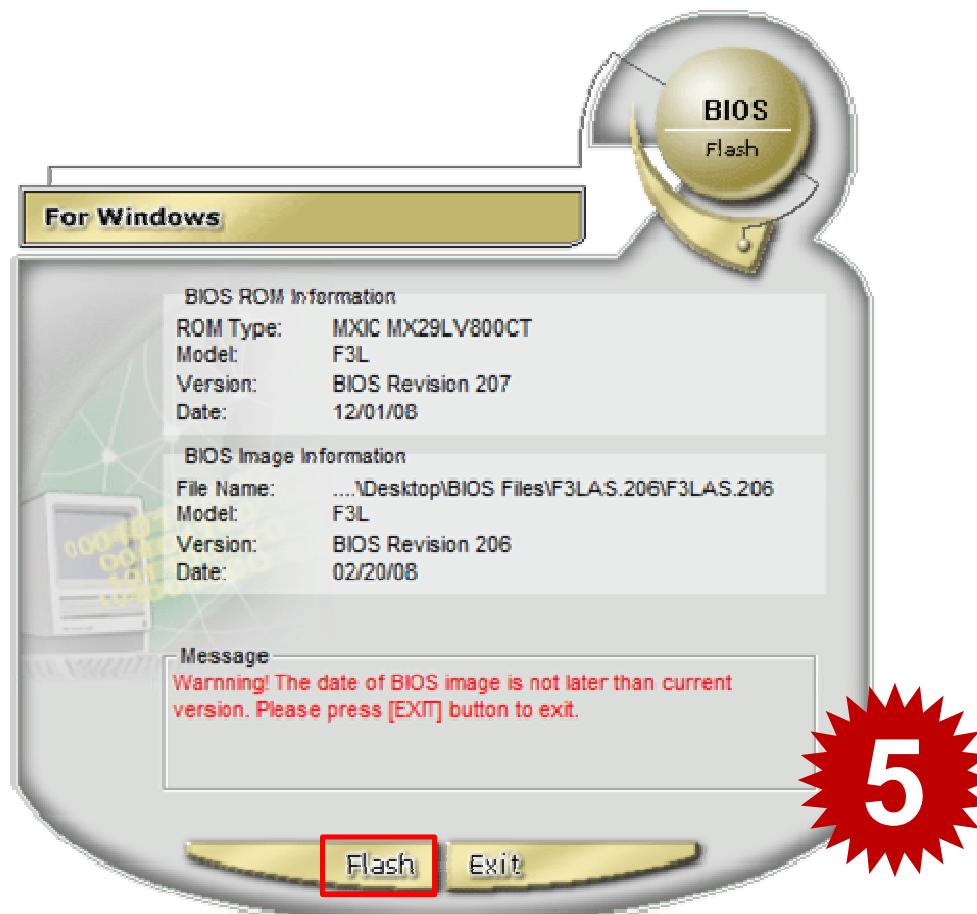
3. Choose the BIOS image file.





Downgrade BIOS

4. Start to Downgrade.





Downgrade BIOS

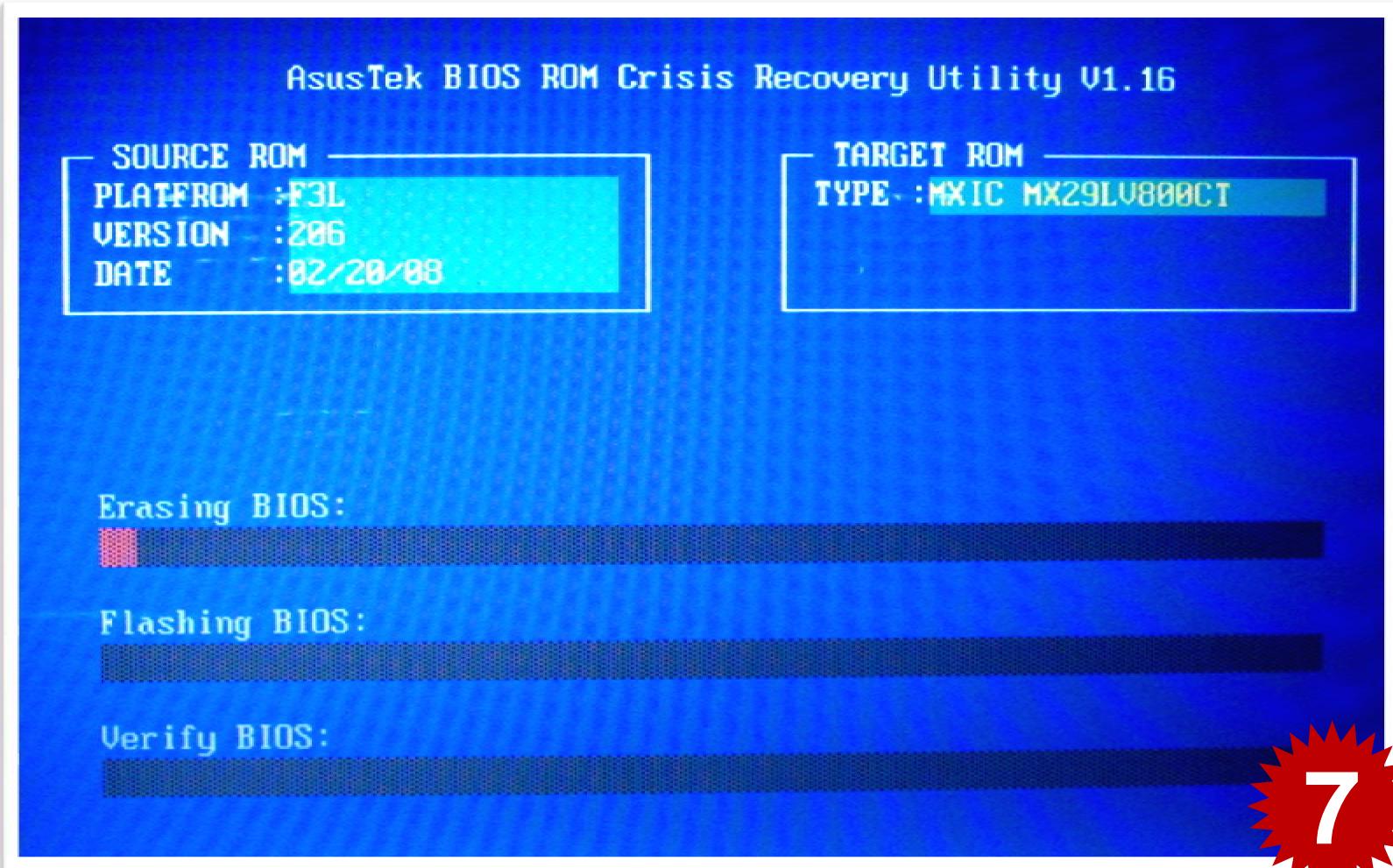
5. The system would shut down automatically and reboot again to enter the easy flash interface to start flash the BIOS.





Downgrade BIOS

6. Erasing BIOS

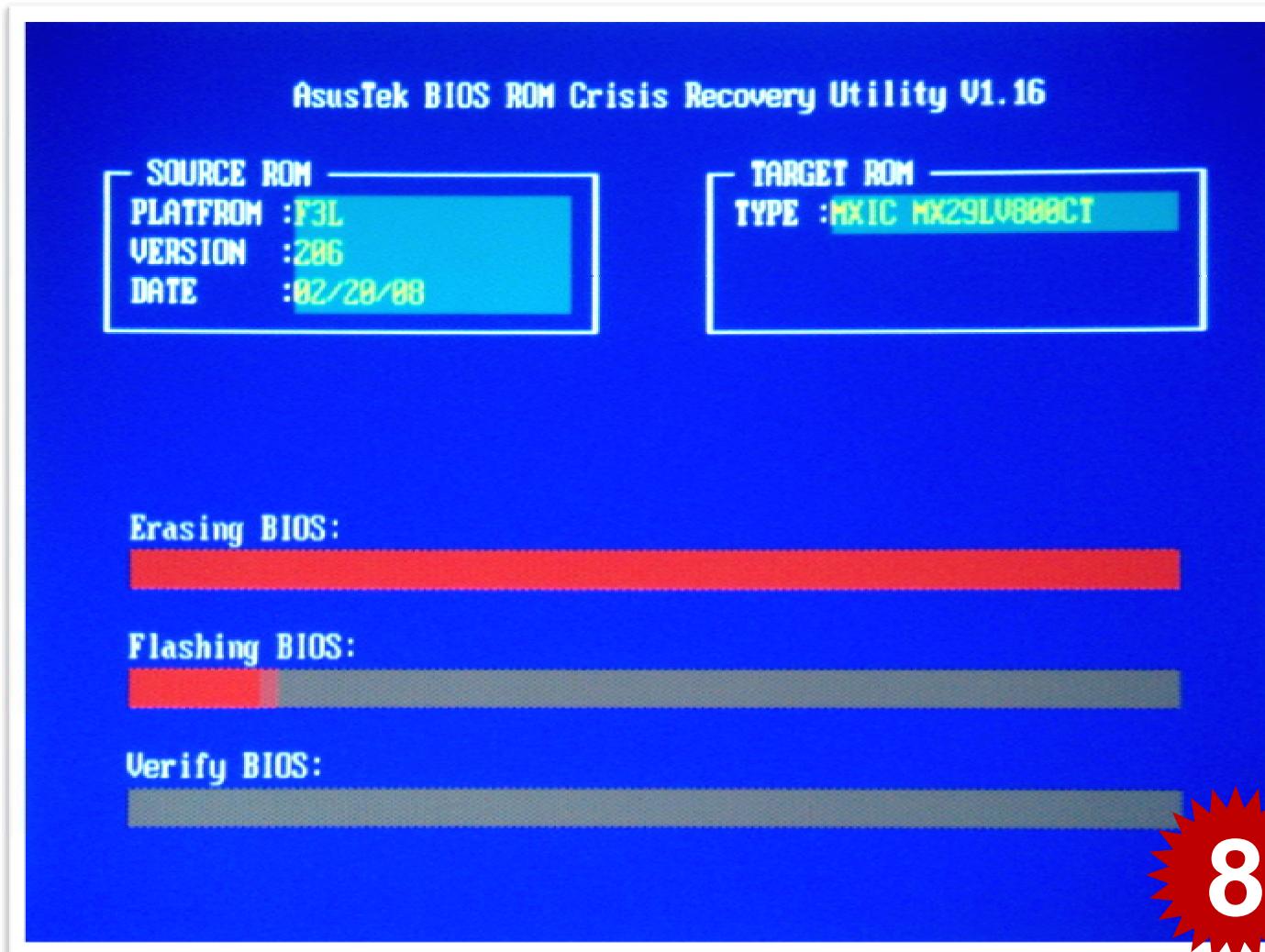


7



Downgrade BIOS

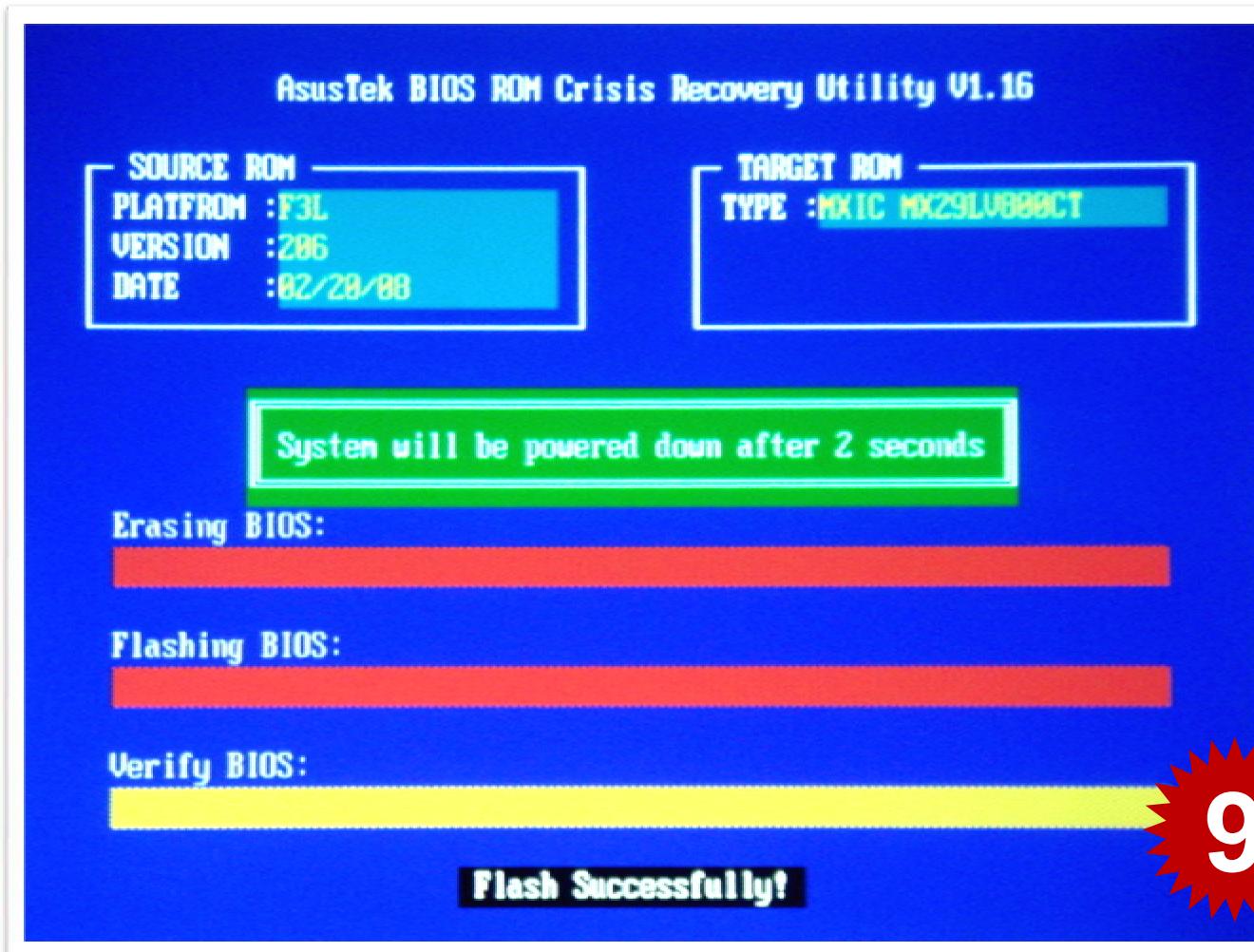
7. Flashing BIOS





Downgrade BIOS

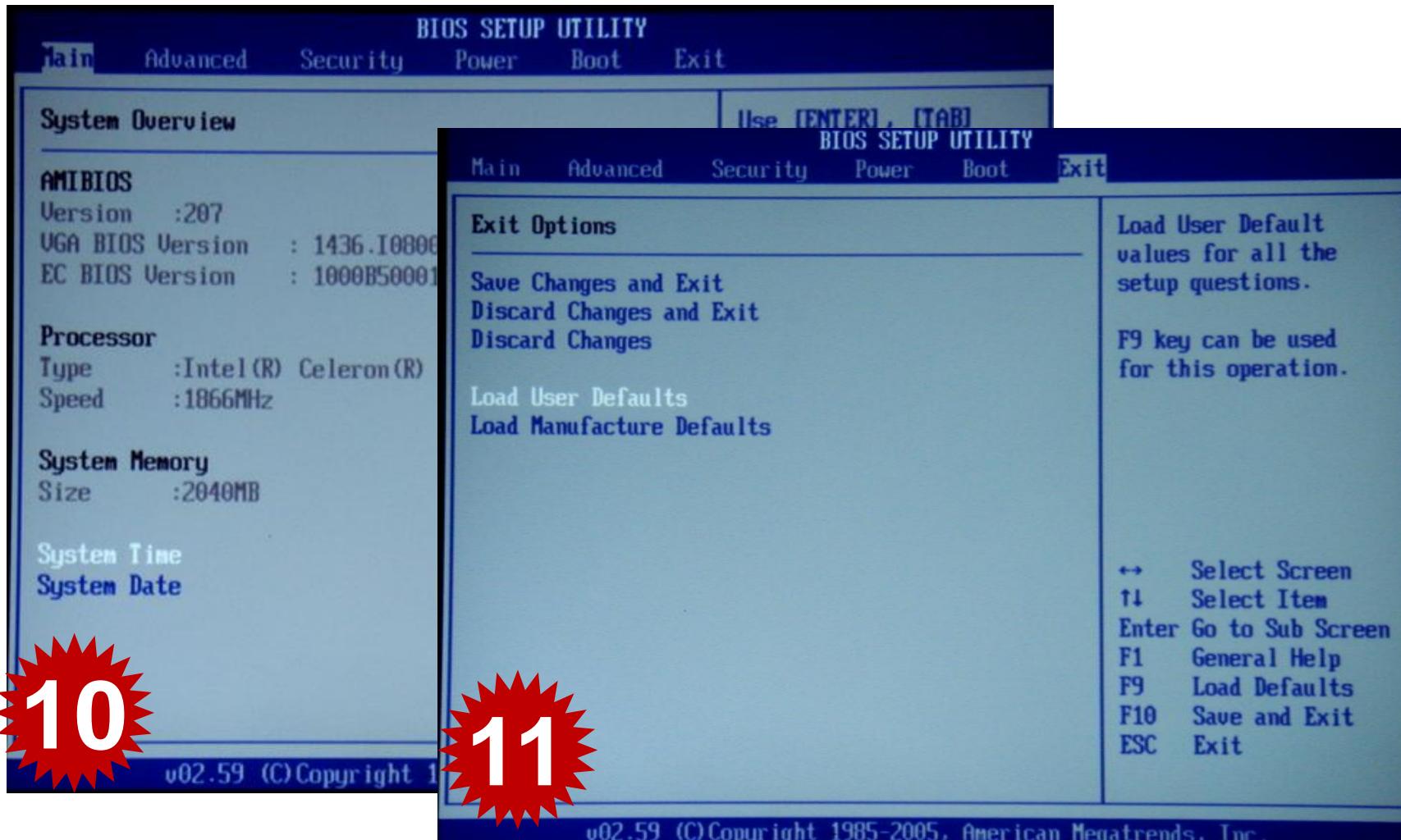
8. Verify BIOS. After flash successfully, the system would shut down automatically.





Downgrade BIOS

9. Please restart and enter the BIOS setup interface to **Load User Defaults**.





Flashing BIOS in FREEDOS



Preparation

- Download the BIOS image files from the SIP website (As it mentioned in the flashing BIOS in OS)
- Prepare a USB DOS booting flash disk with the “AFLASH.EXE” program and the BIOS image files in.





Flashing BIOS in FREEDOS

1. Booting from the USB to enter into the FREEDOS

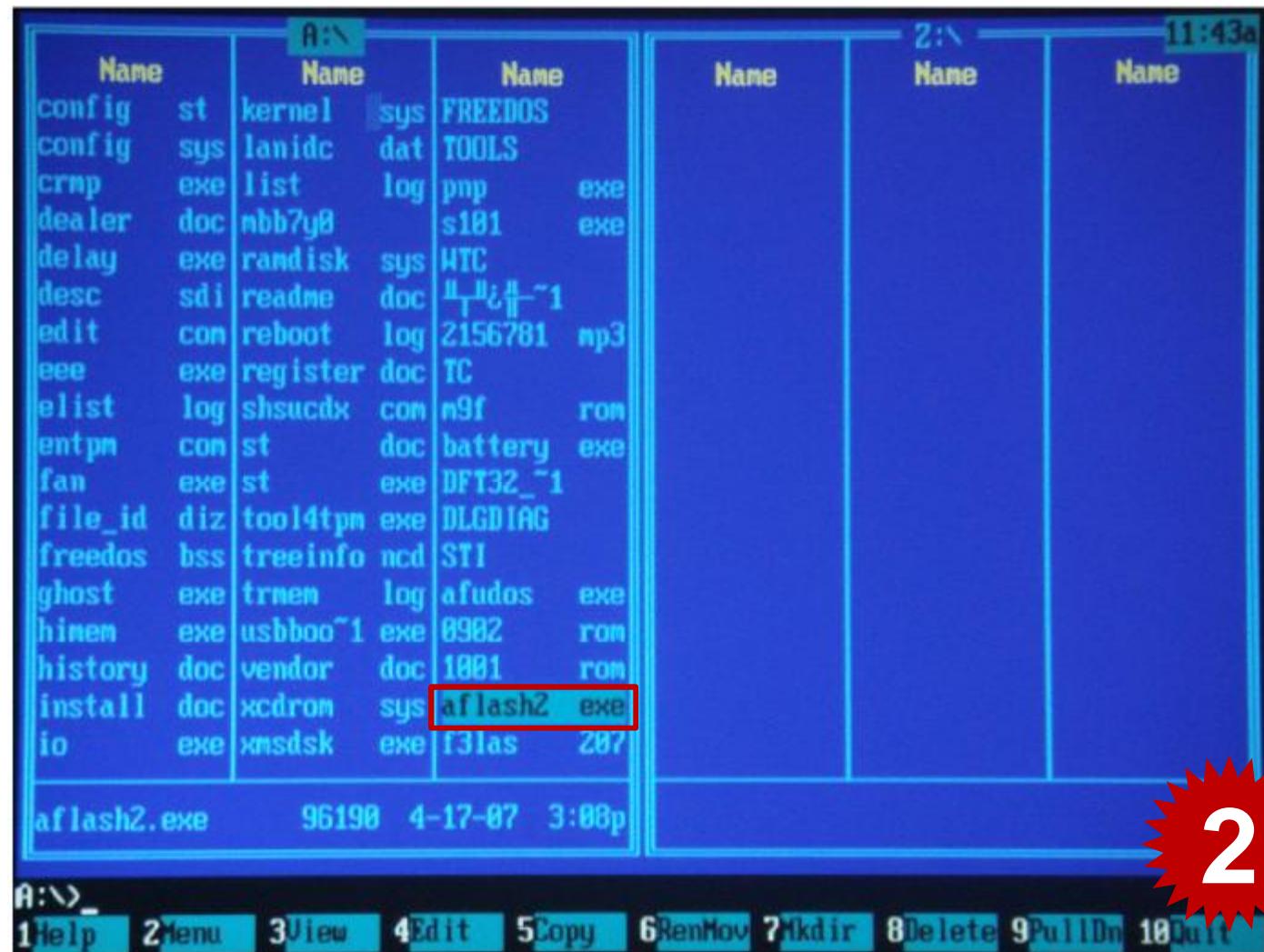


1



Flashing BIOS in FREEDOS

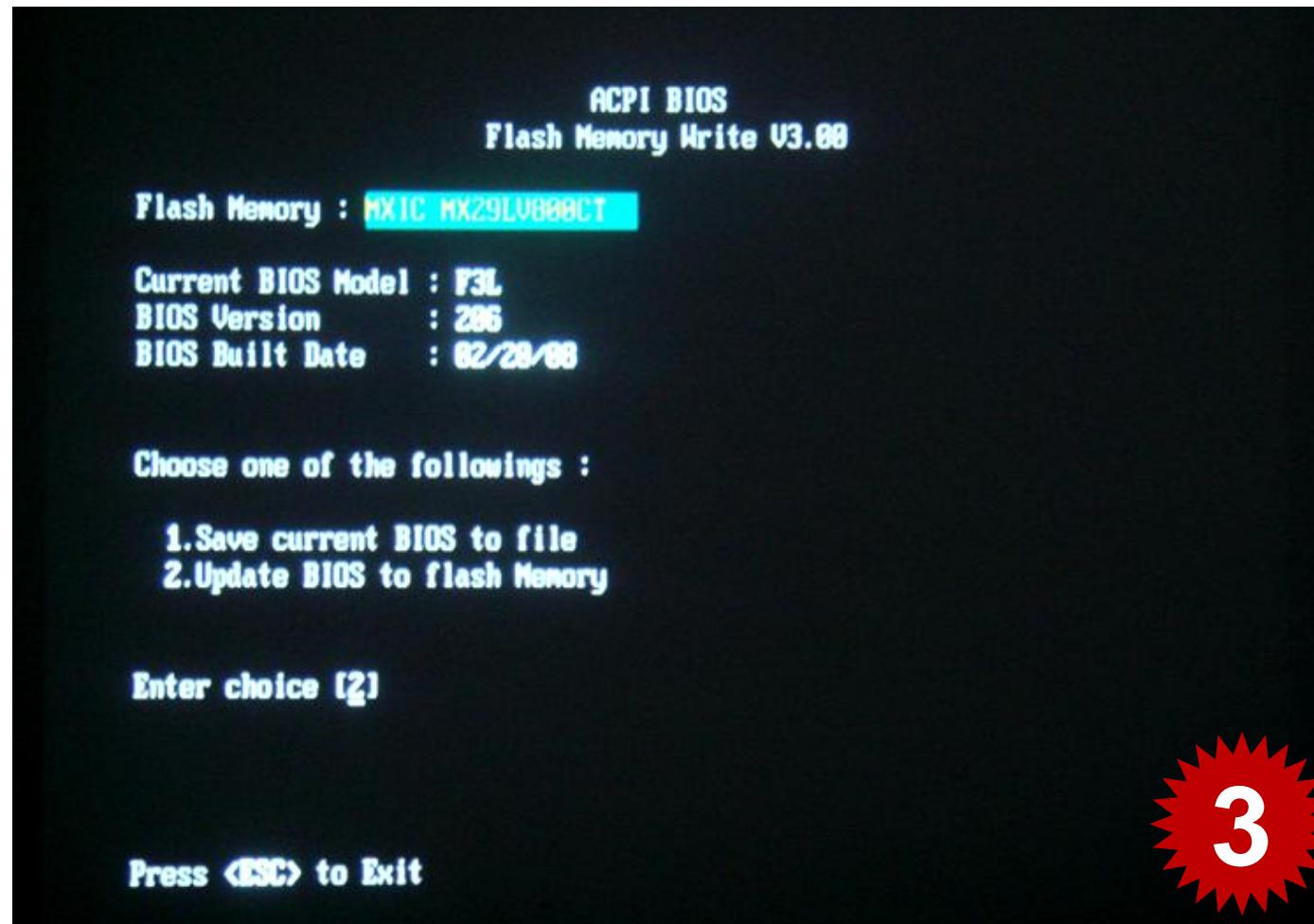
2. Select `aflash2.exe` to run updating BIOS program





Flashing BIOS in FREEDOS

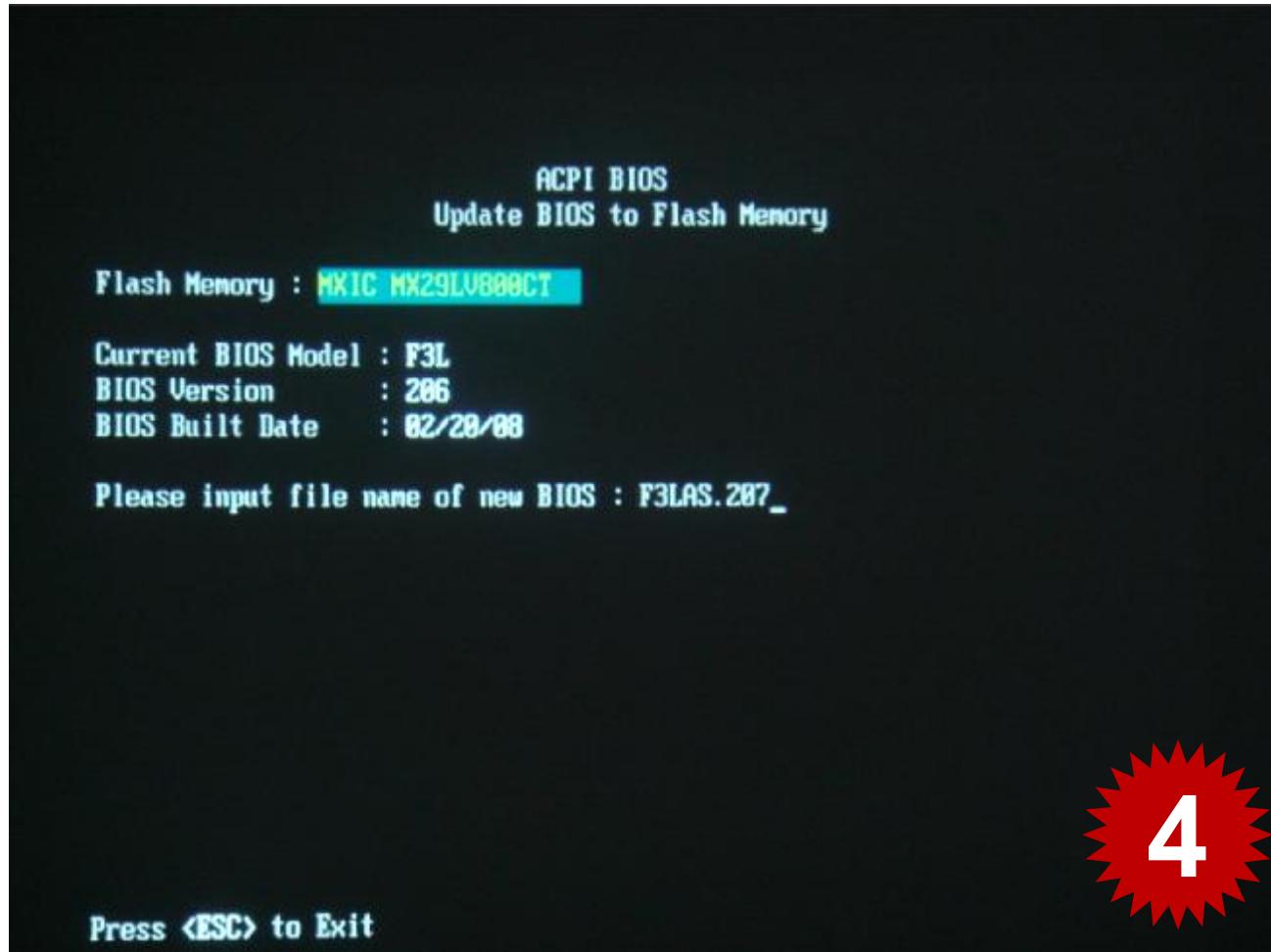
3. Select <2.update BIOS to new version>





Flashing BIOS in FREEDOS

4. Input file name of new BIOS

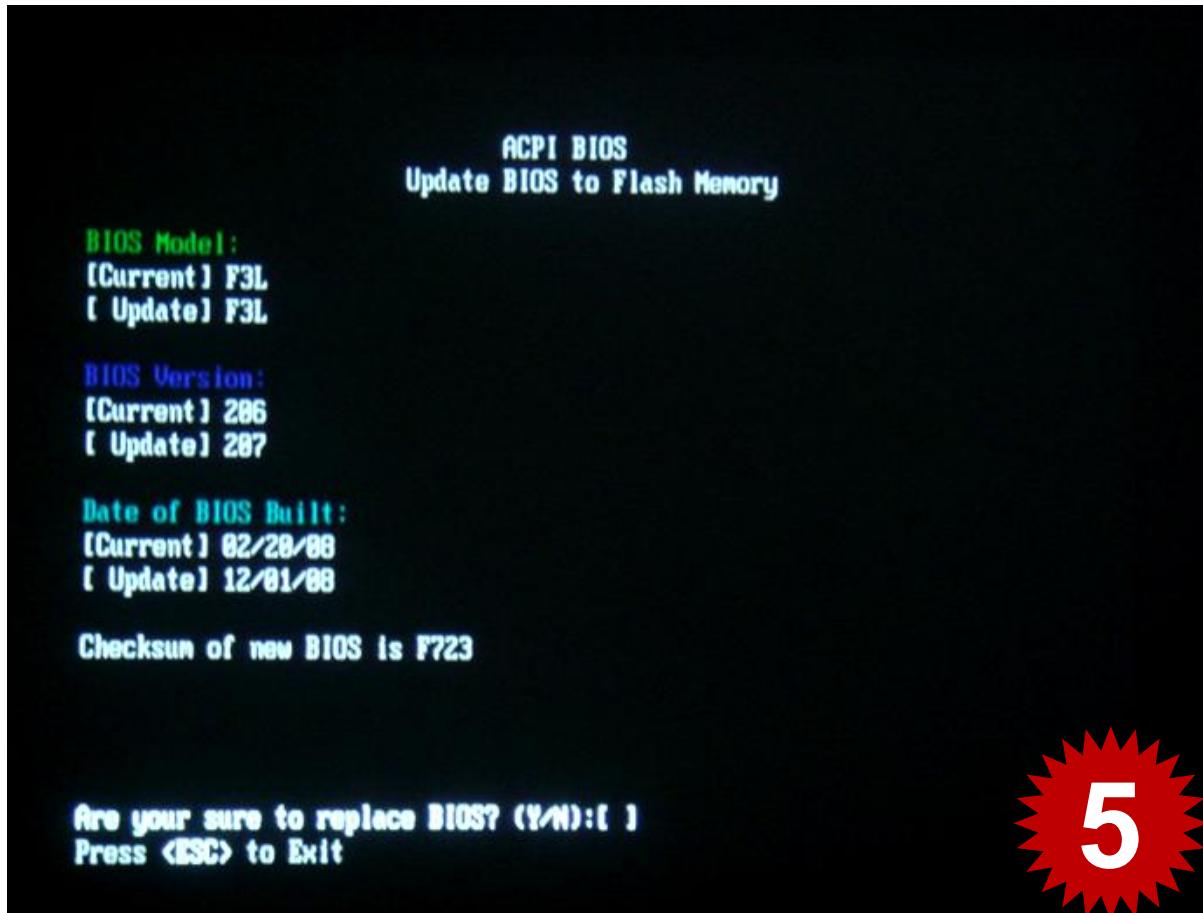




Flashing BIOS in FREEDOS

5. Confirm the new BIOS name and make sure to start flashing

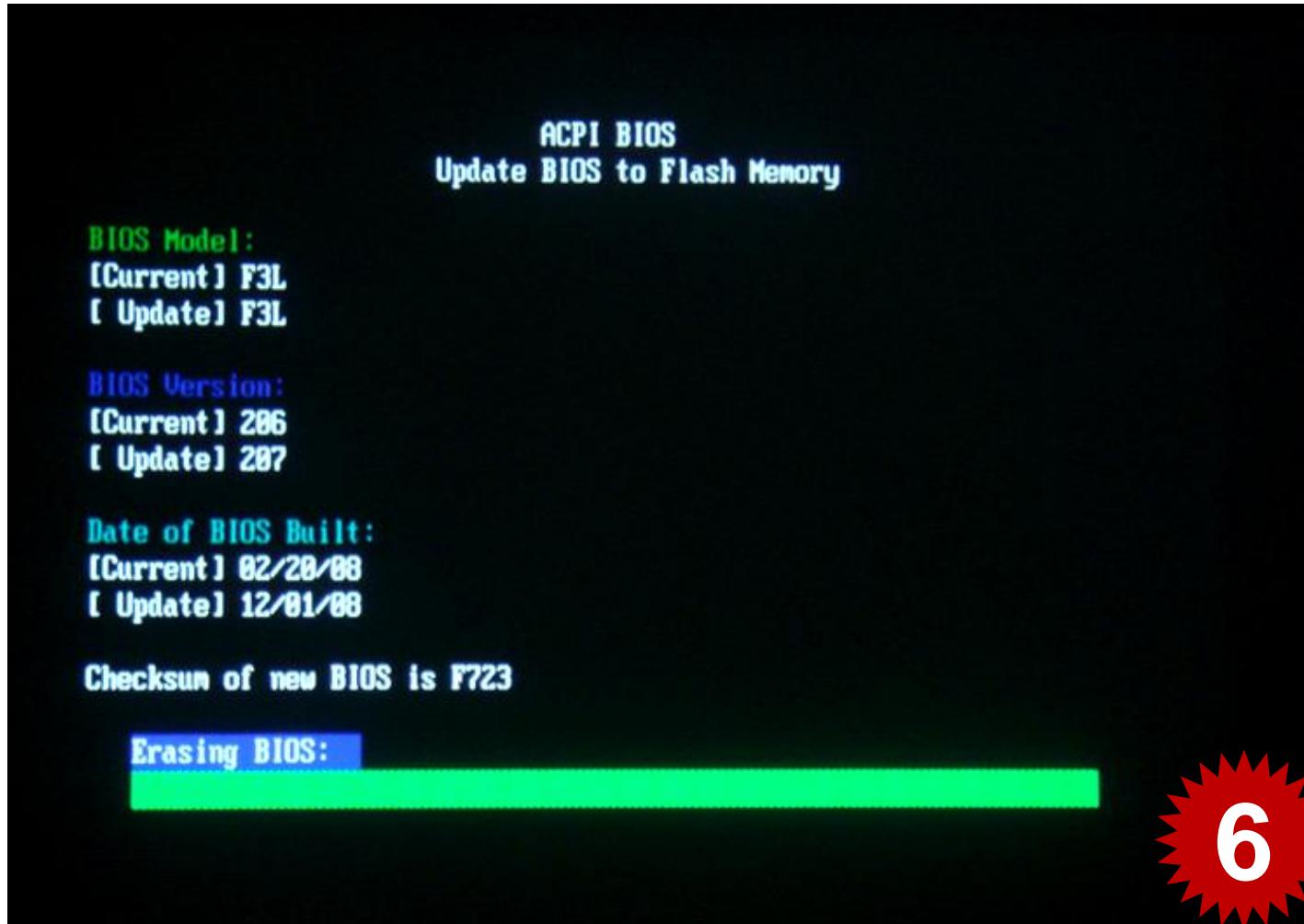
In this stage, please carefully check the model and version is correct then enter “Y” to continue, otherwise the system will flash a wrong BIOS which will cause the problem of no boot.





Flashing BIOS in FREEDOS

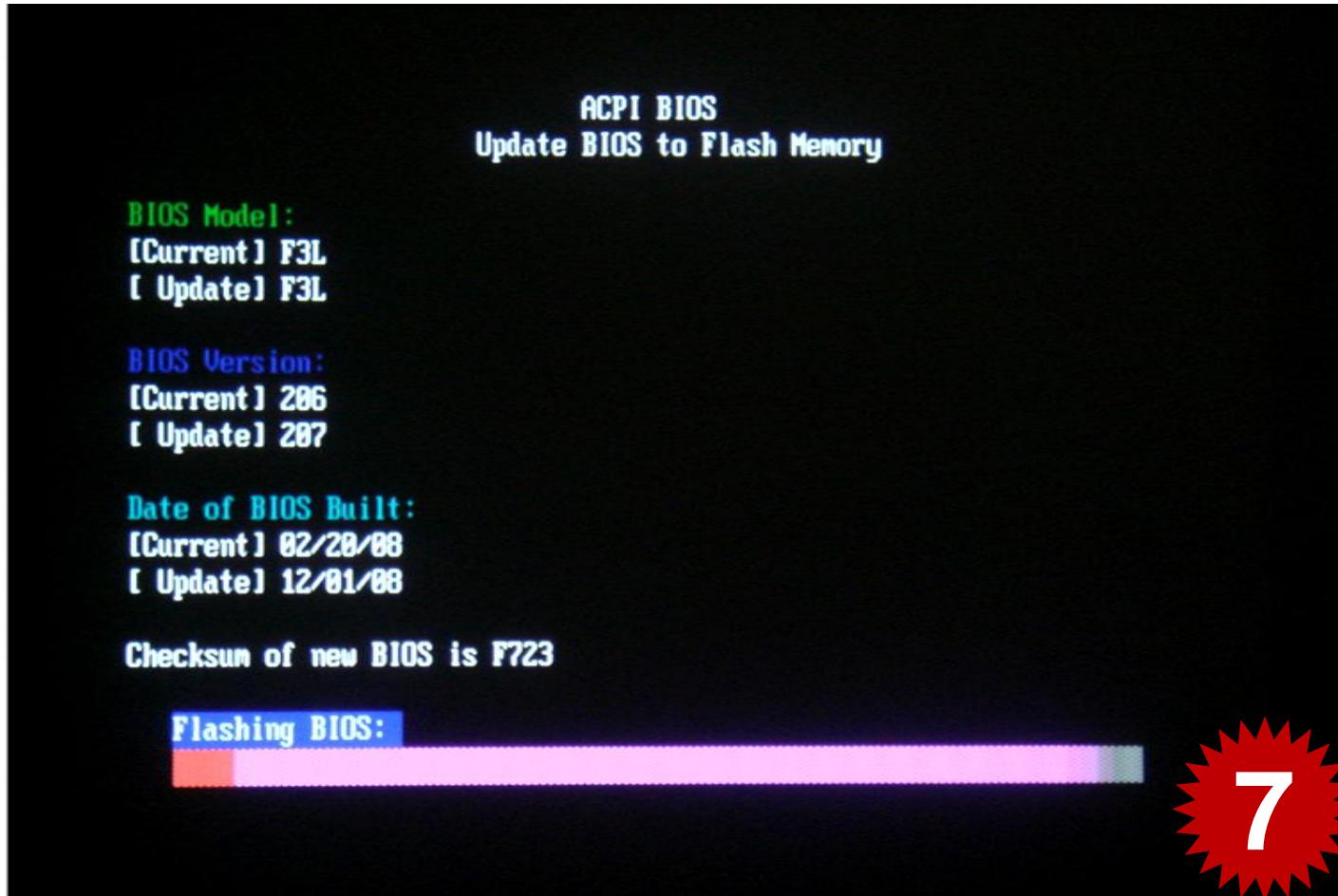
6. Erasing BIOS





Flashing BIOS in FREEDOS

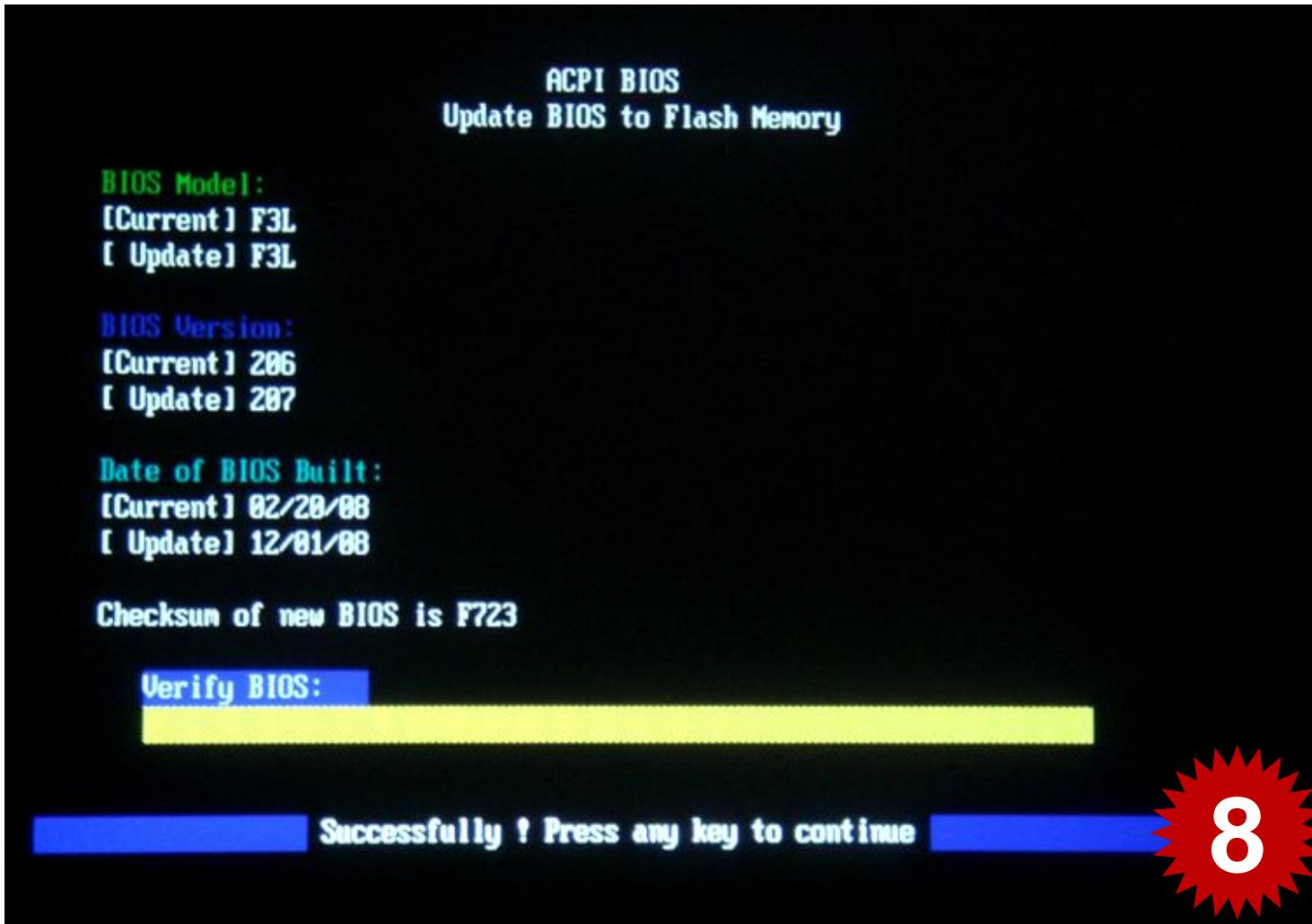
7. Flashing BIOS





Flashing BIOS in FREEDOS

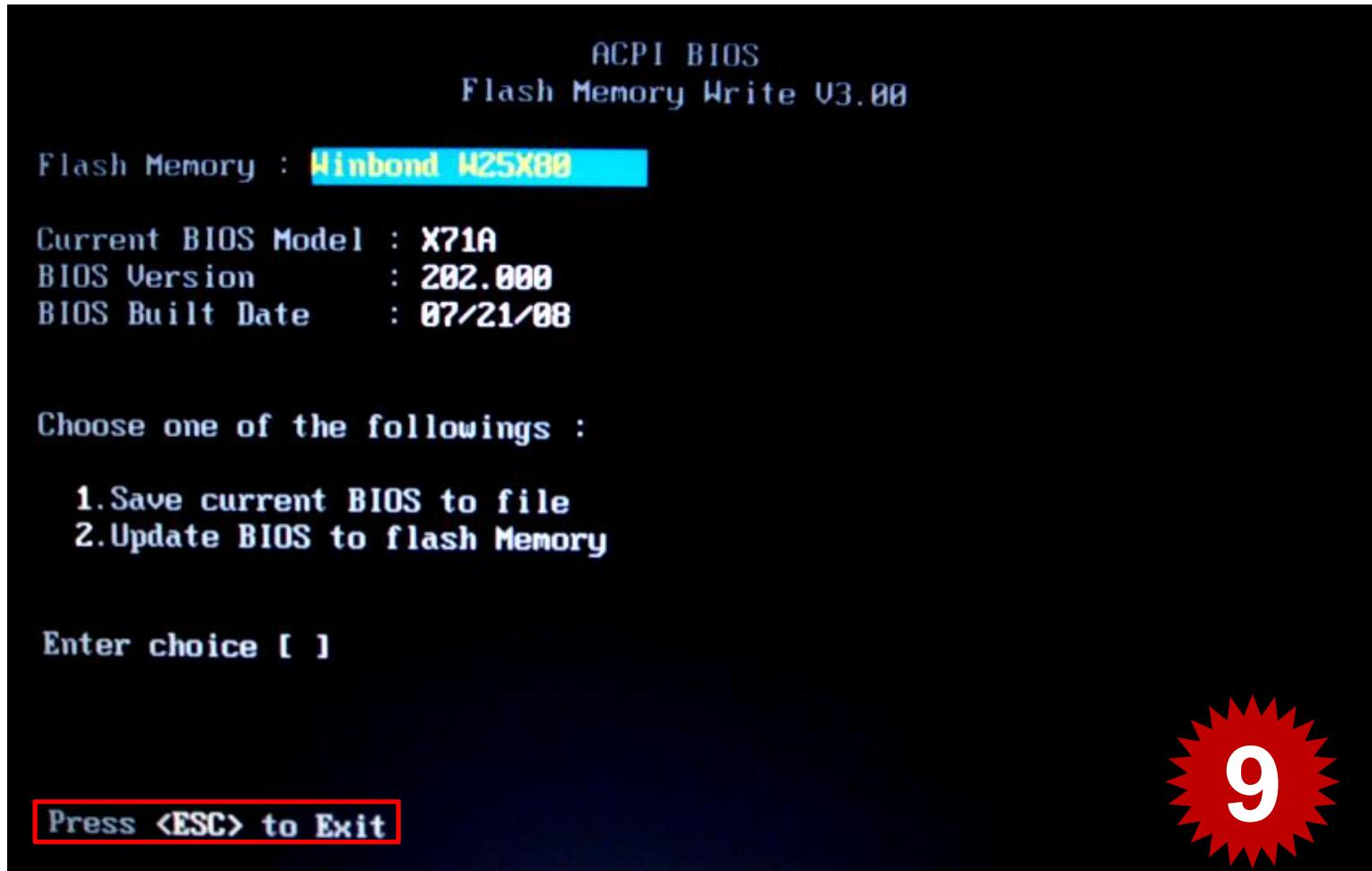
8. Verify BIOS





Flashing BIOS in FREEDOS

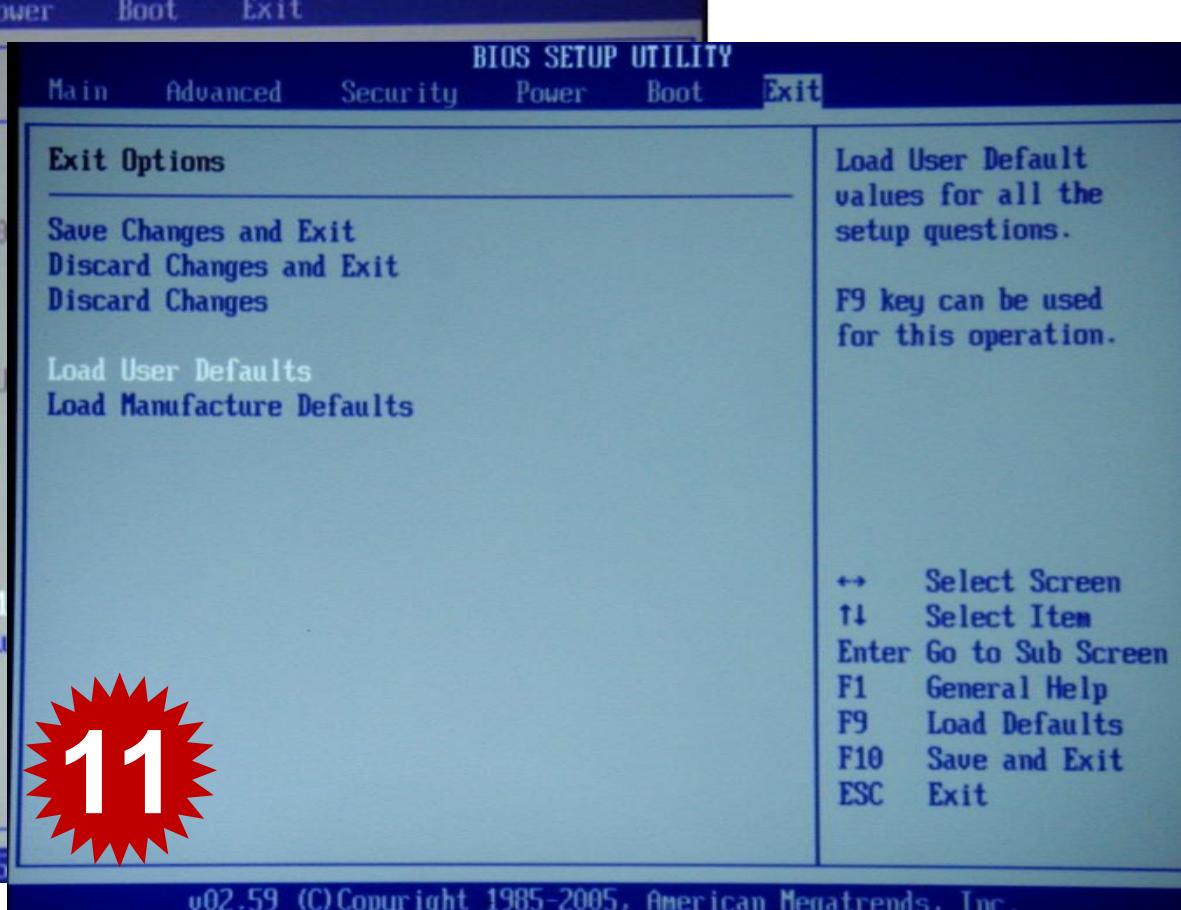
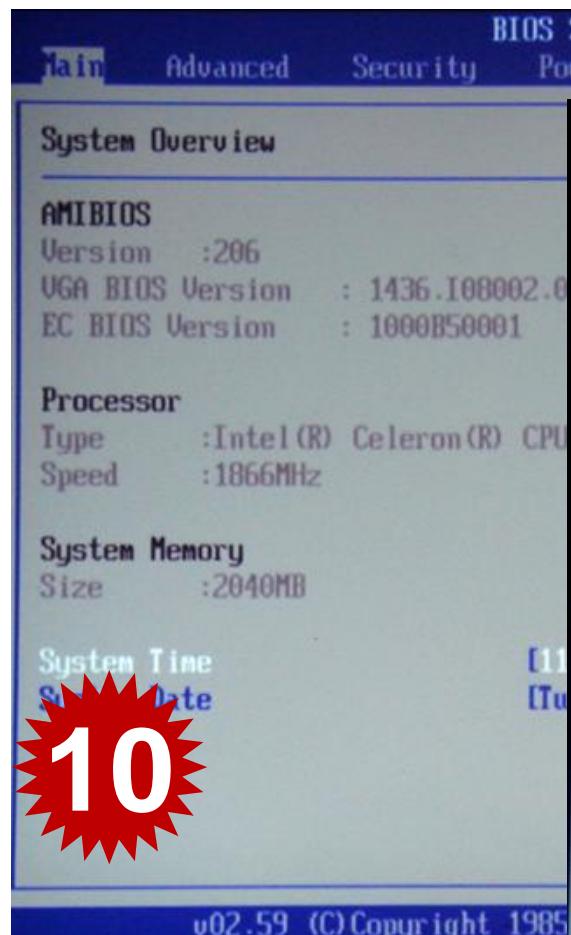
9. Complete Flashing and EXIT





Flashing BIOS in FREEDOS

10. Restart the PC and enter into the BIOS SETUP UTILITY to check the BIOS info.





Flashing BIOS in BIOS SETUP UTILITY

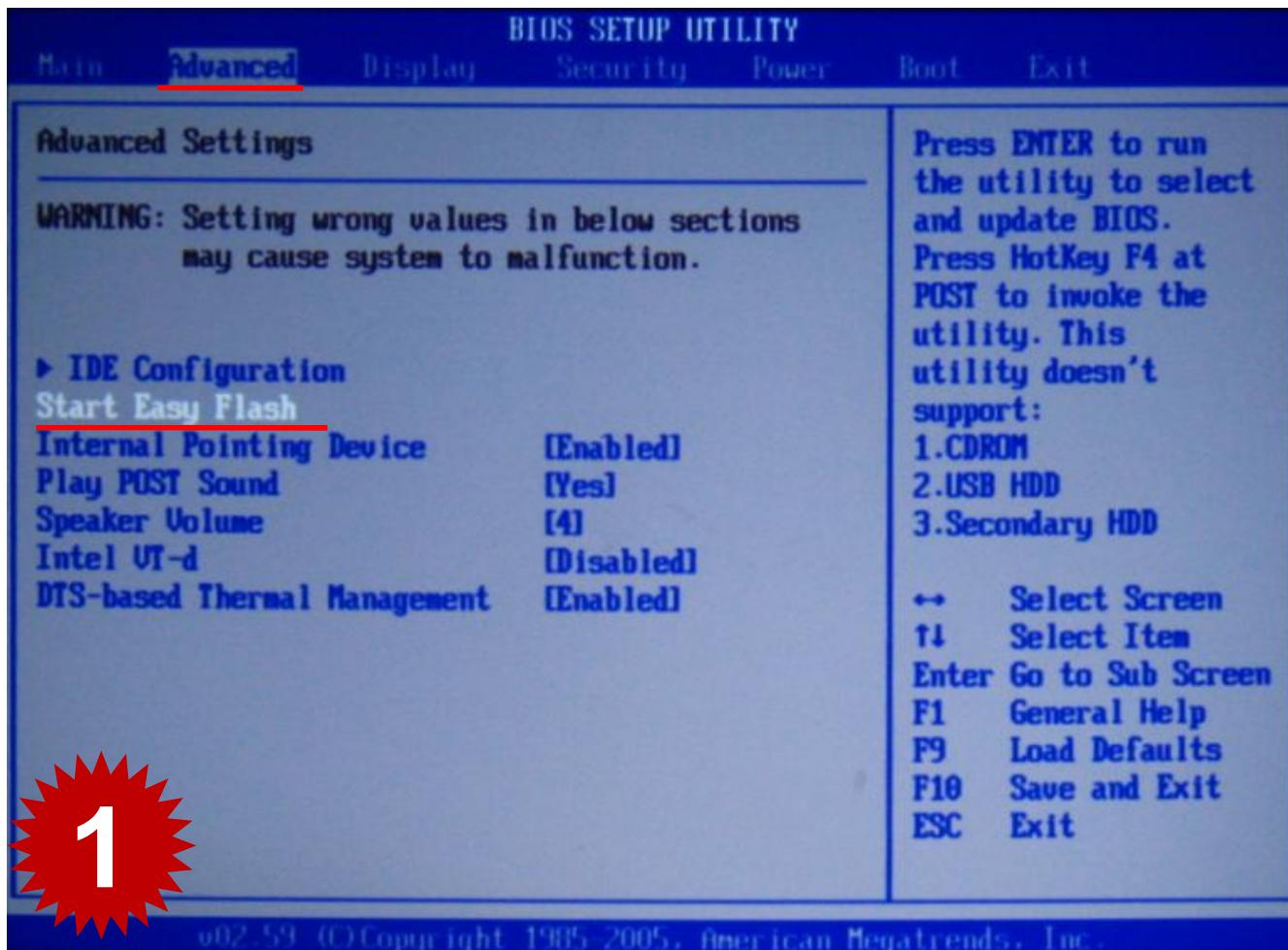
Description:

For the computer with the **Napa** platform and the latter one, BIOS updating could be completed directly in the BIOS setup interface.



Flashing BIOS in BIOS SET UTILITY

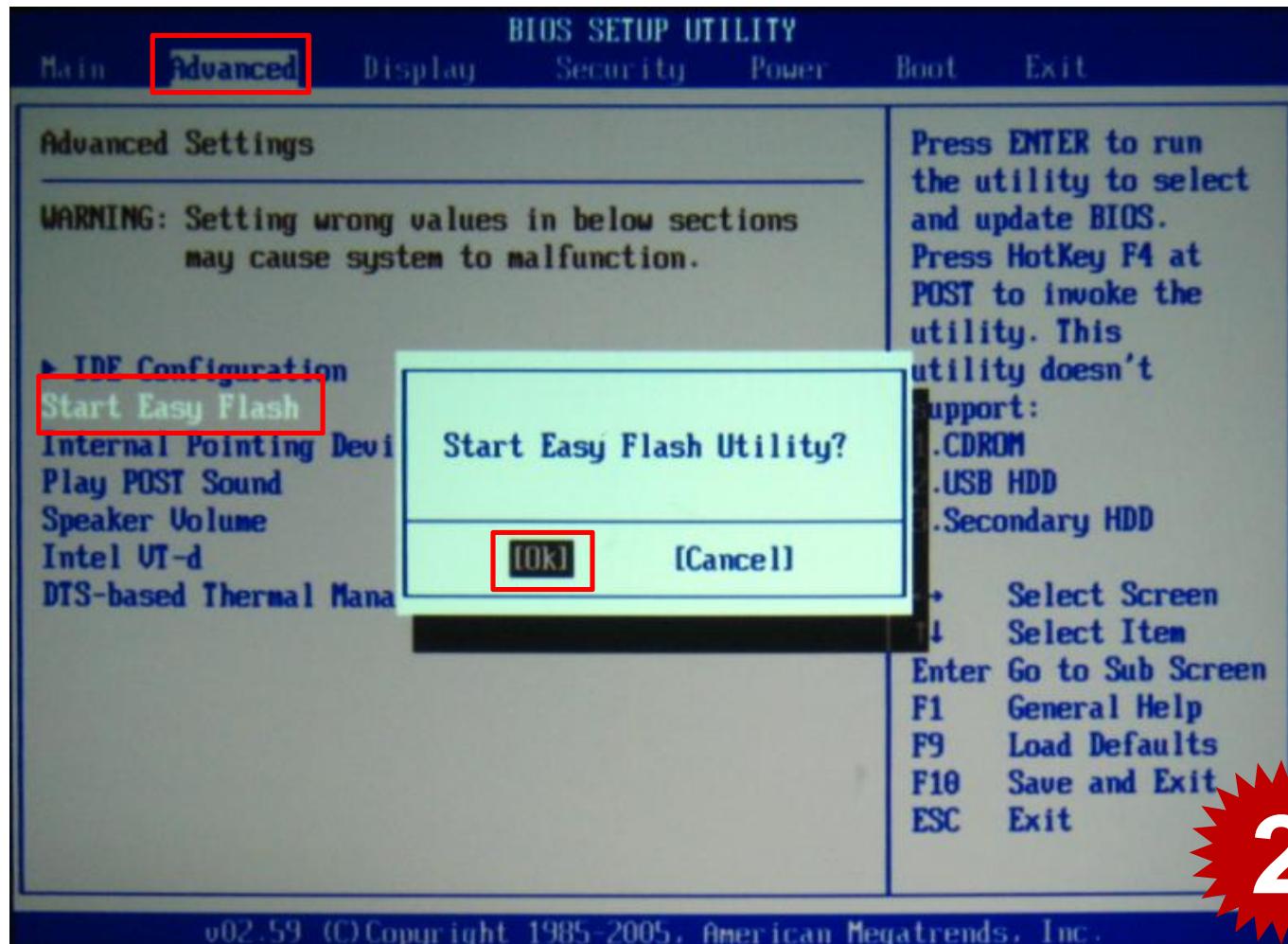
1. Press F2 to enter the BIOS SETUP Interface to start the flashing.
The procedure is as below:





Flashing BIOS in BIOS SET UTILITY

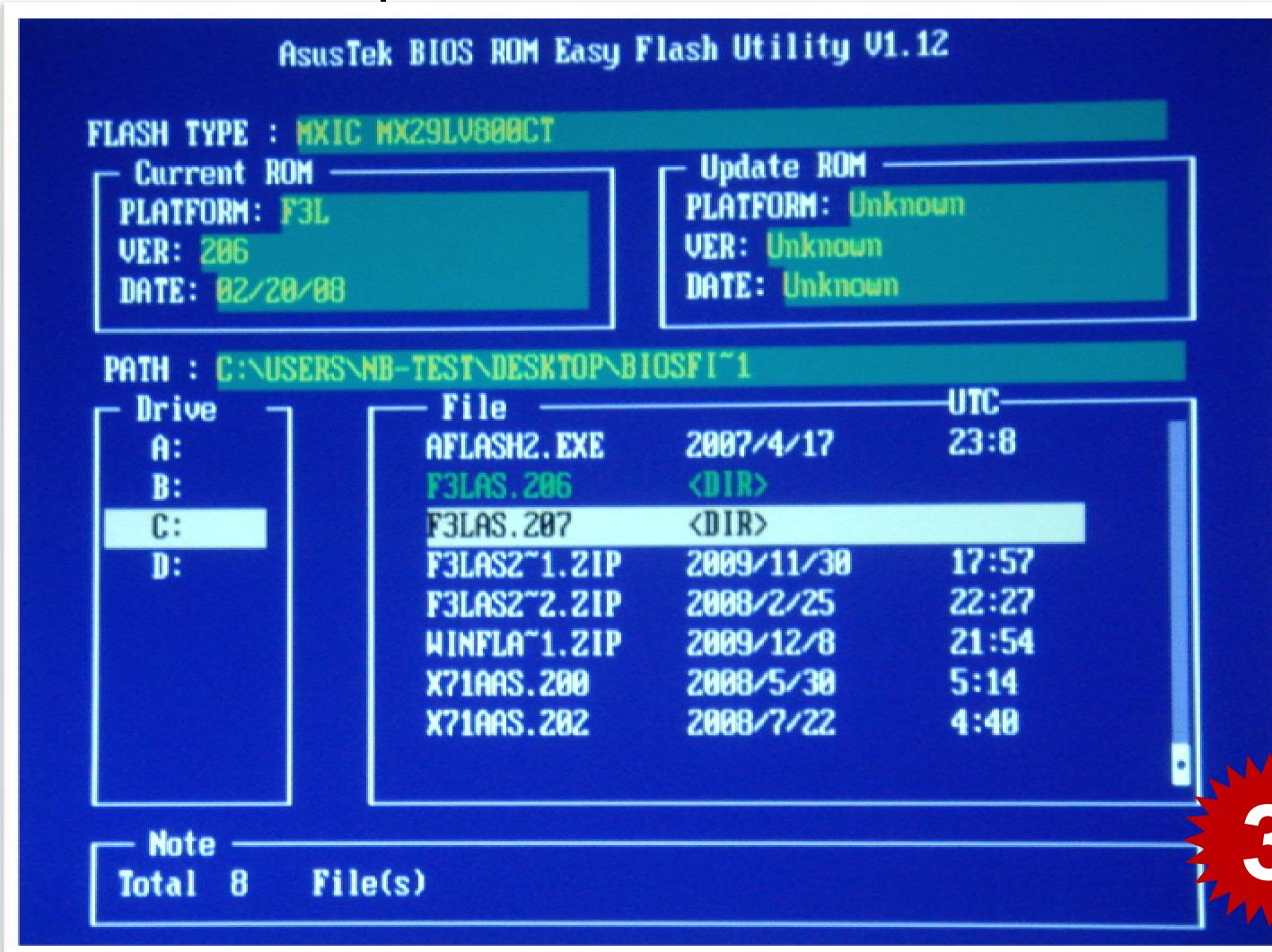
2. Start to Easy Flash





Flashing BIOS in BIOS SET UTILITY

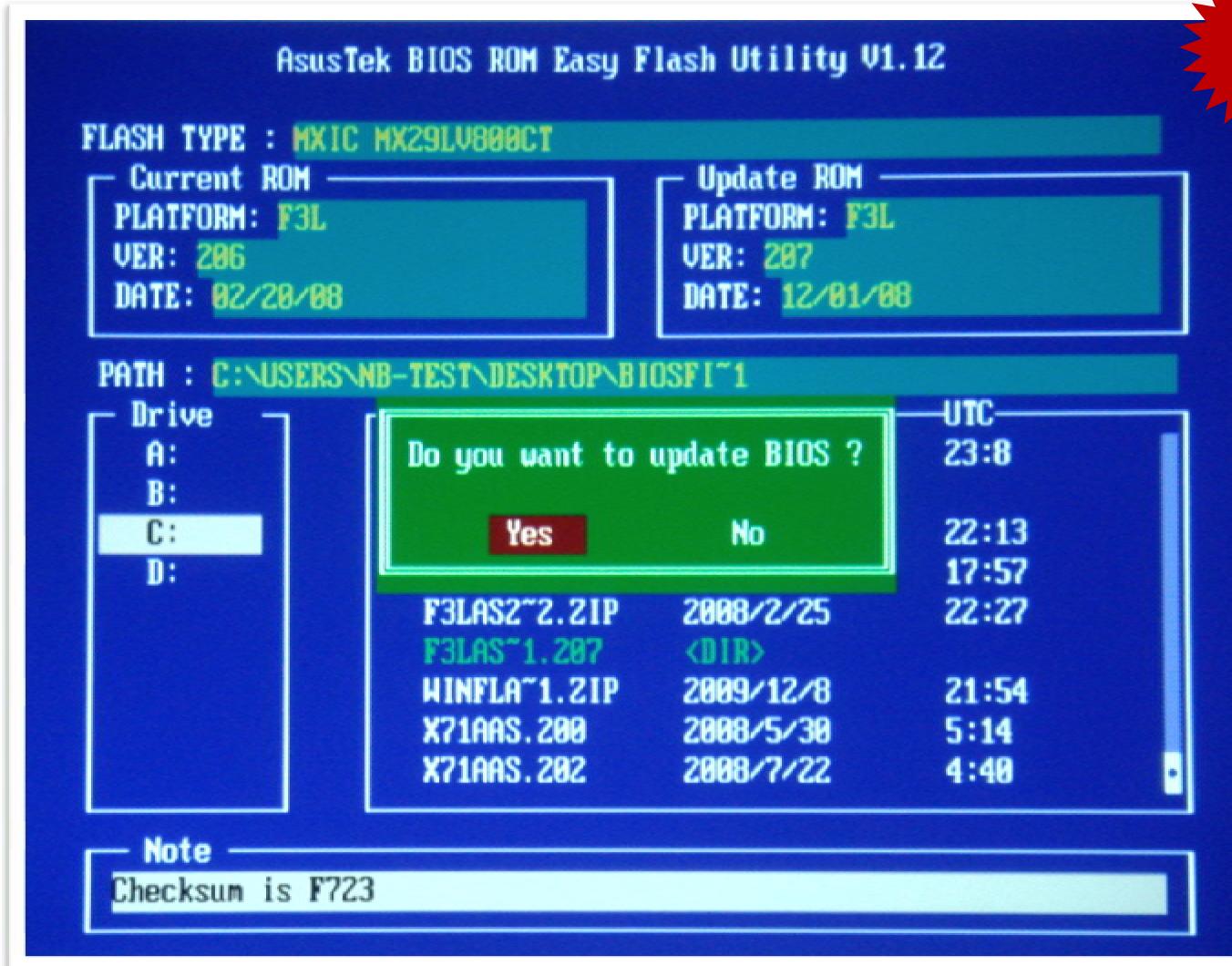
3. Select the BIOS file path





Flashing BIOS in BIOS SET UTILITY

3. Confirm to update BIOS

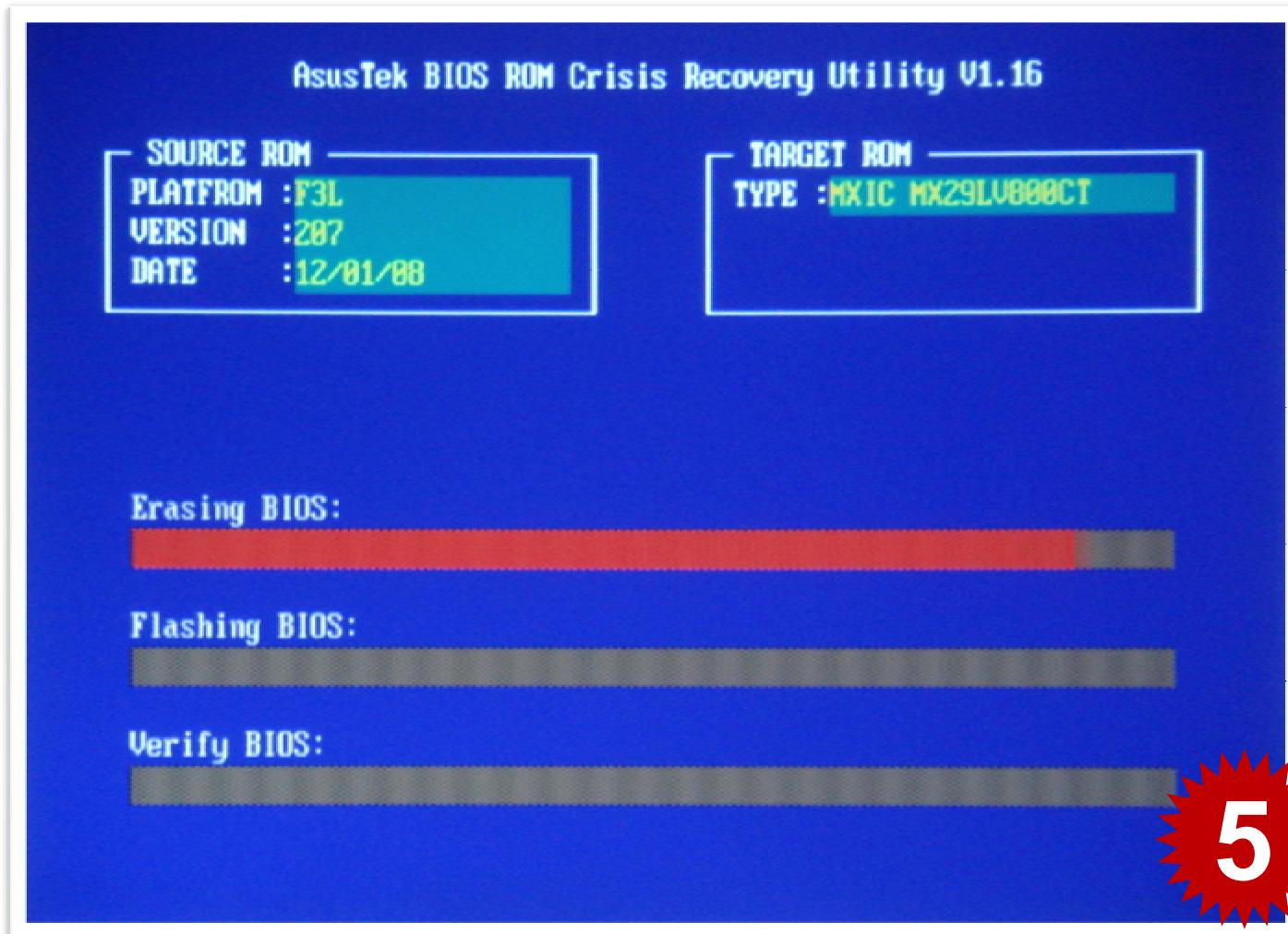


4



Flashing BIOS in BIOS SET UTILITY

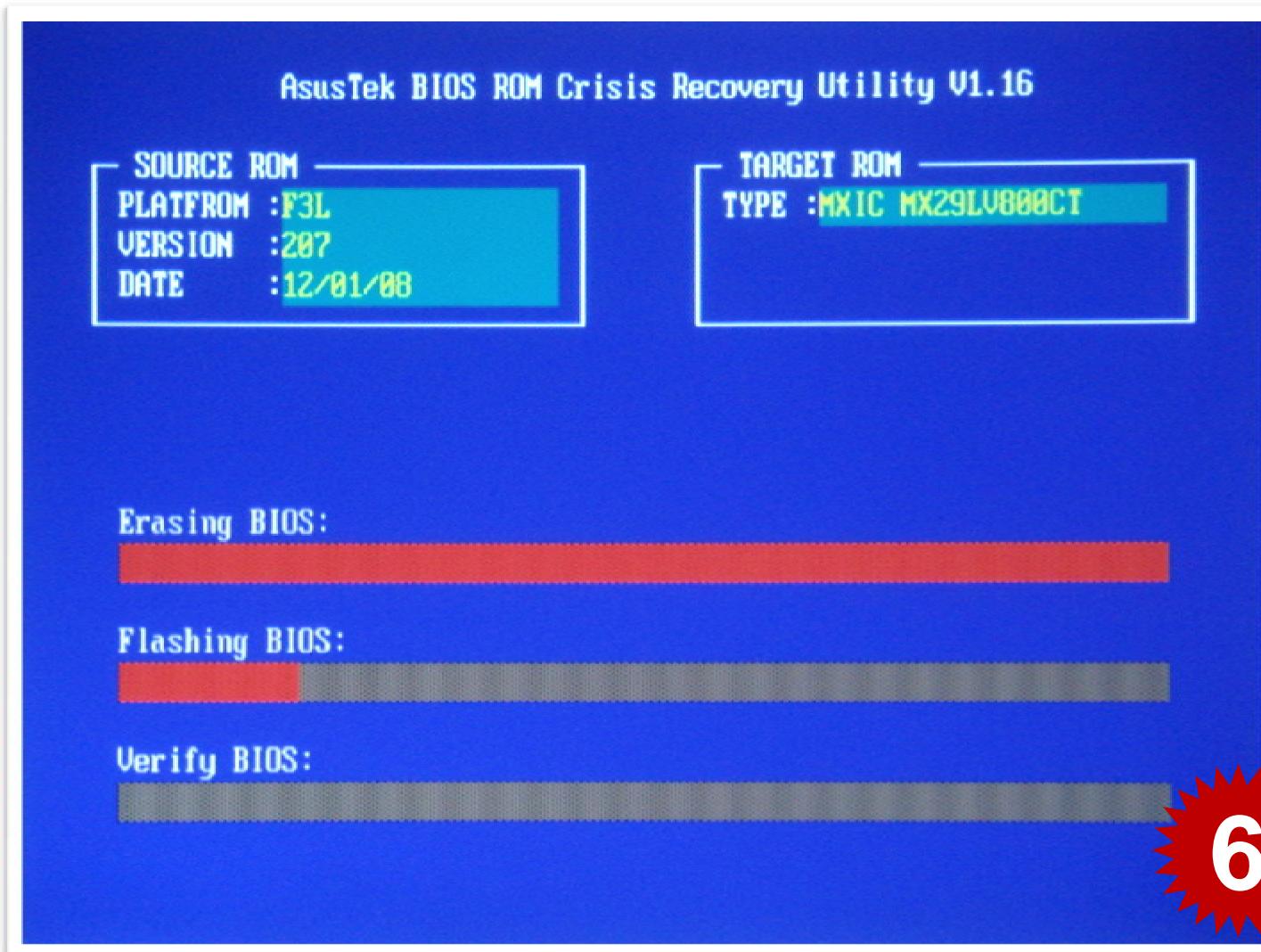
4. Erasing BIOS





Flashing BIOS in BIOS SET UTILITY

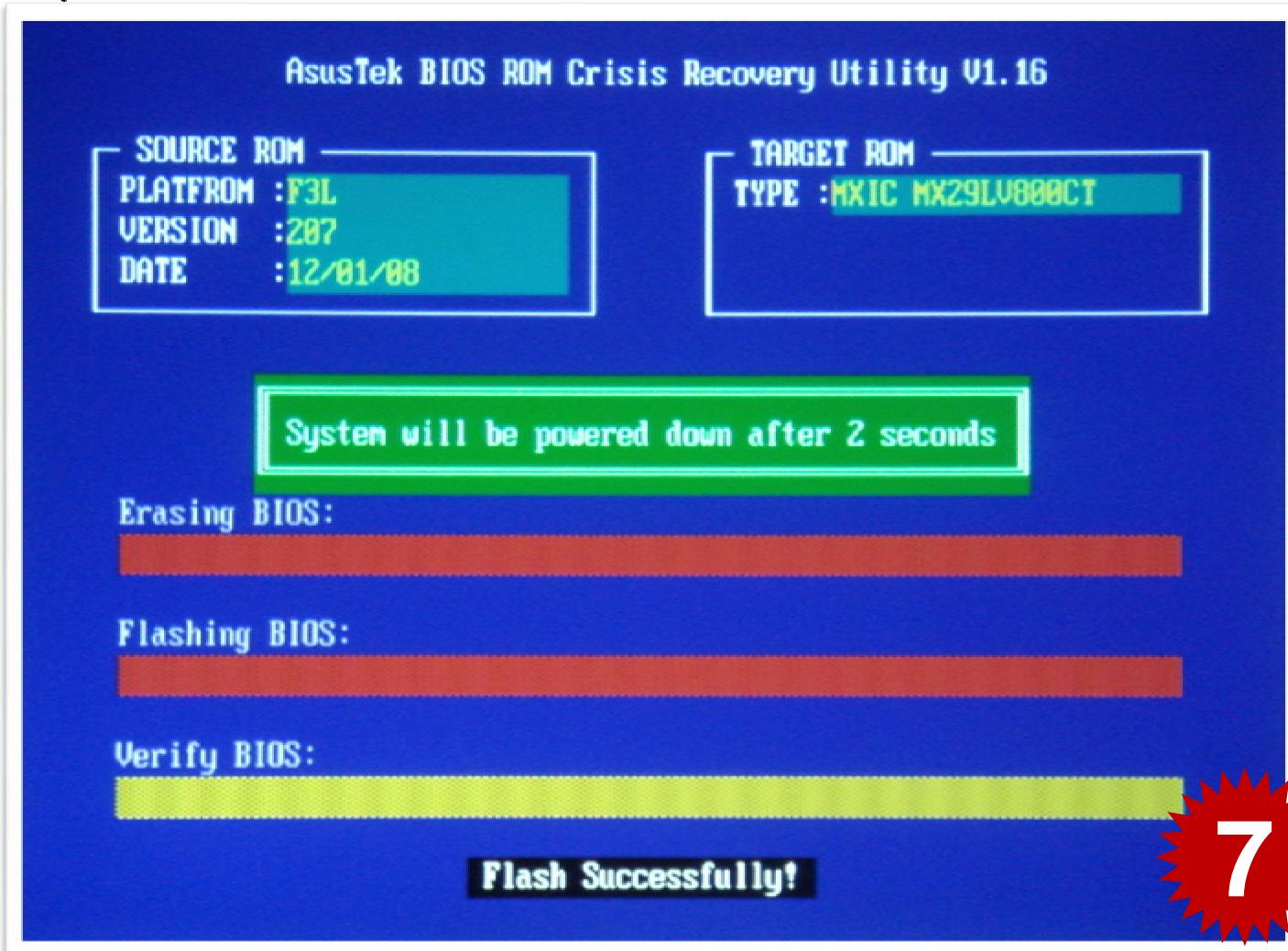
5. Flashing BIOS





Flashing BIOS in BIOS SET UTILITY

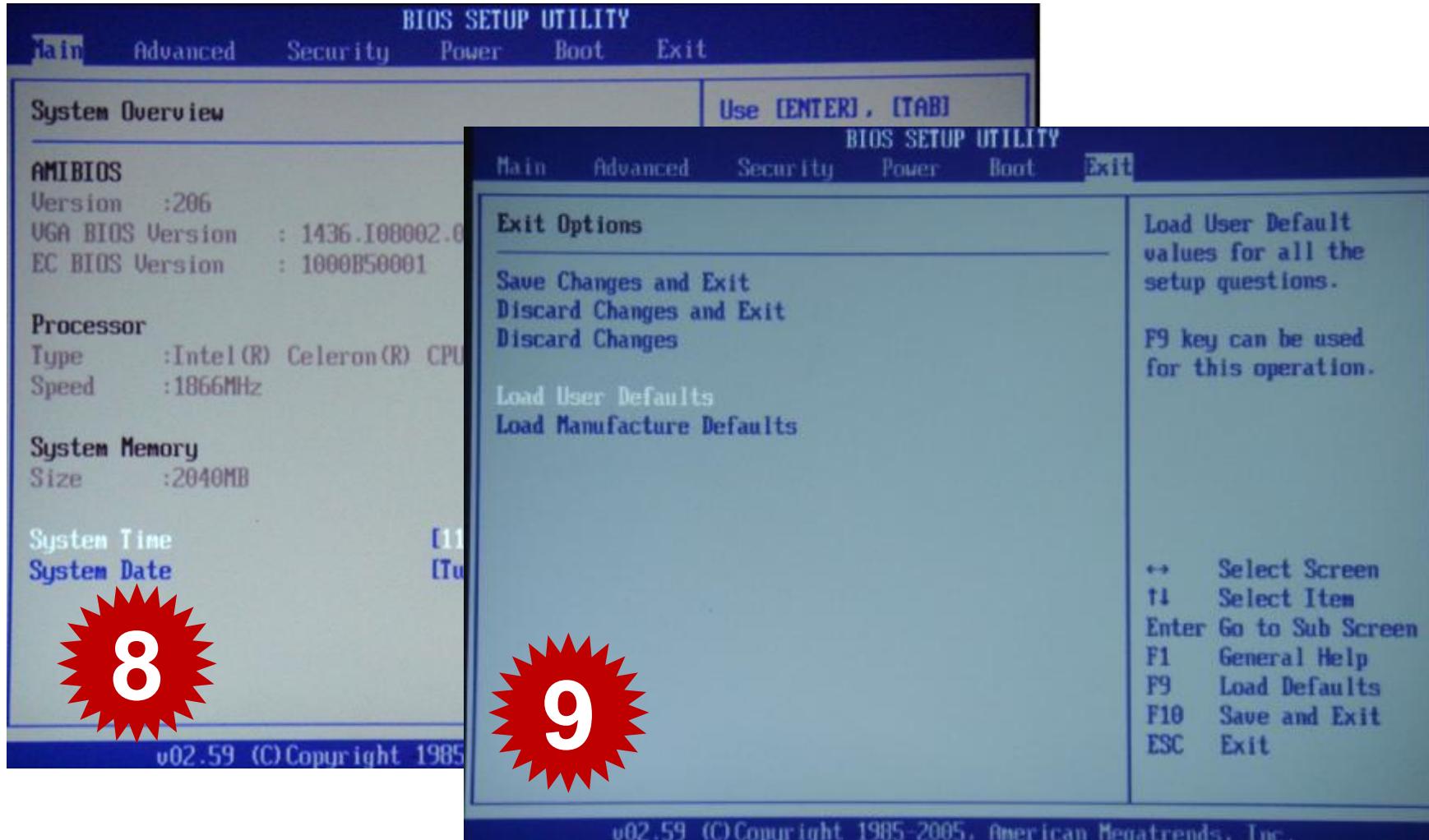
6. Verify BIOS





Flashing BIOS in BIOS SET UTILITY

7. Restart the PC and enter into the BIOS SETUP UTILITY to check the BIOS info.





Flashing BIOS by Jig Board

Description:

This is a tool for flashing BIOS. The other three ways introduced before is for the software. In the case of failure flashing BIOS by software, which would cause no boot, the BIOS could be flashed by another tool – JIG BOARD.

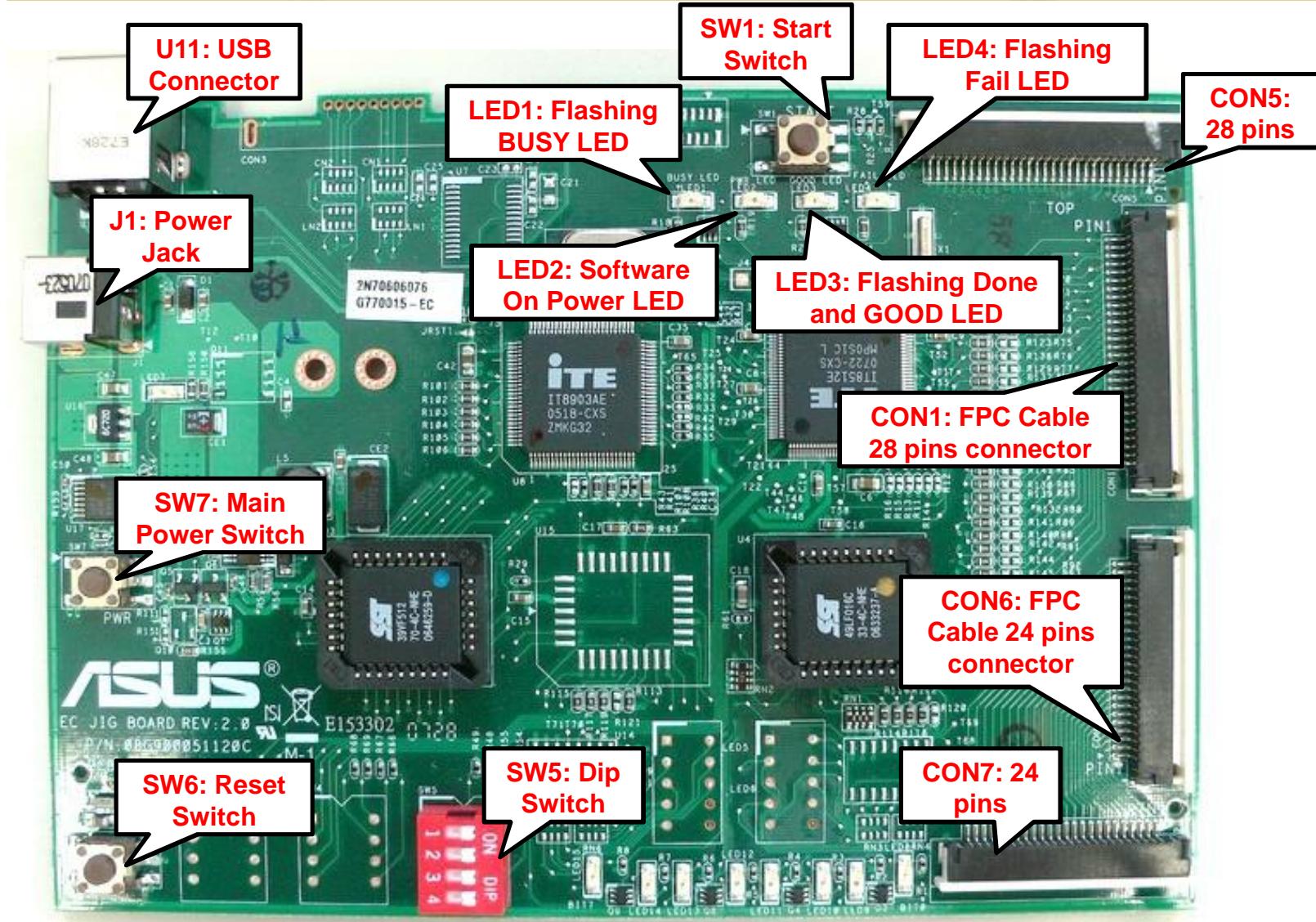


Jig Board Introduction

Part Number	Fixture Name	Amount	Photo
60-2N70606073	Jig Board	1	
14G000505705	USB Cable	1	
14G122300240	FPC Cable(28 pin)	1	
14G122300280	FPC Cable(24 pin)	1	
04-266003160	NB Adapter (65W)	1	
14-110060370	Power Cord	1	



Overview





Notebook Supported

The JIG Board only supports the notebook PC whose BIOS chip is ITE.

A	C	F	G	R	T	V	W	U	X	Z
A3AC	C90S	F3SA	G1S	R1E	T12EG	VX2S	W2S	U1F	X51R	Z37E
A3FC		F3SC	G2S	R1F	T12FG	V2JE	W7S			Z84J
A3FP		F3SV	G2P		T12FF		W7E			Z96S
A3H		F3SE			T12FH		W1JB			Z62F
A3HF		F9DC			T12FV					Z62FP
A6F		F9E			T12H					Z62FM
A6RP		F9S			T12J					Z62J
A6HF		F2F			T12J3					Z62JM
A7C		F2HF			T12JG					Z84F
A7CD		F2J			T12RG					Z84FM
A7J		F2JE			T12RV					Z91FR
A7F		F3F			TRSA					Z94RP
A7P		F3H			T11F					Z96F
A7S		F3P			T11J					Z96FM
A8E		F3JA			T11JA					Z96H
A8S		F3JC			T11JB					Z96HM
A8SC		F3JP			T11JL					Z96J
A9RP		F3JR			T12RV					Z96JM
		F3JM			T12MG					Z96JP
		F3JV			T12MV					Z96JS
		F3M			T12UV					
		F3T			T13FG					
		F3TC			T13FV					
		F3U			T13MV					
		F5R			T19F					
		F5M			T19H					
		F9F			T19R					
		F9J								



Flashing BIOS with JIG Board

Load ROM files to the JIG Board

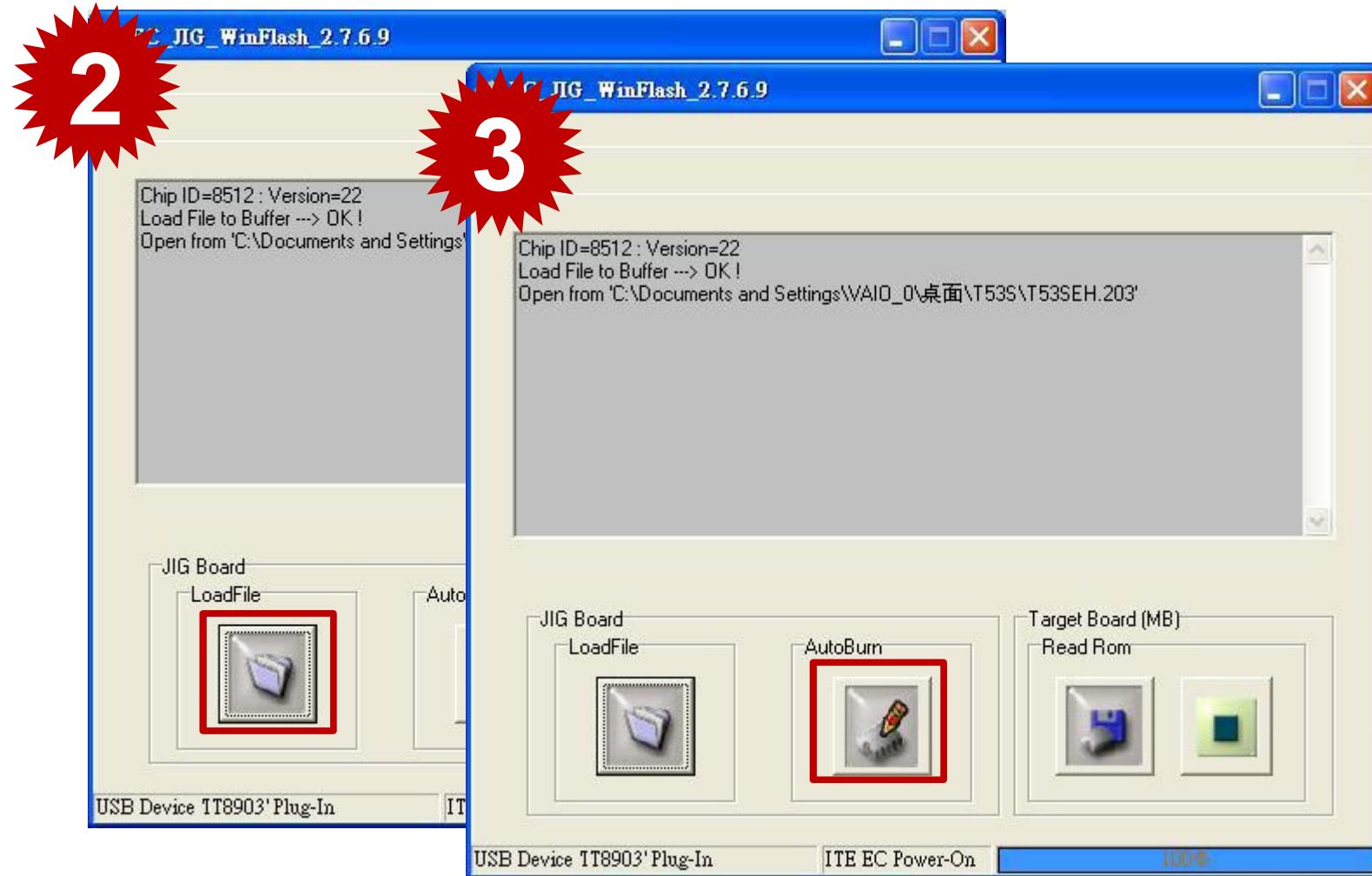
1. Use USB cable to connect the JIG Board with the target board. Then plug in the DC Power to JIG Board.(12~19V, notebook power adapter). Press the power button to turn on the board.





Flashing BIOS with JIG Board

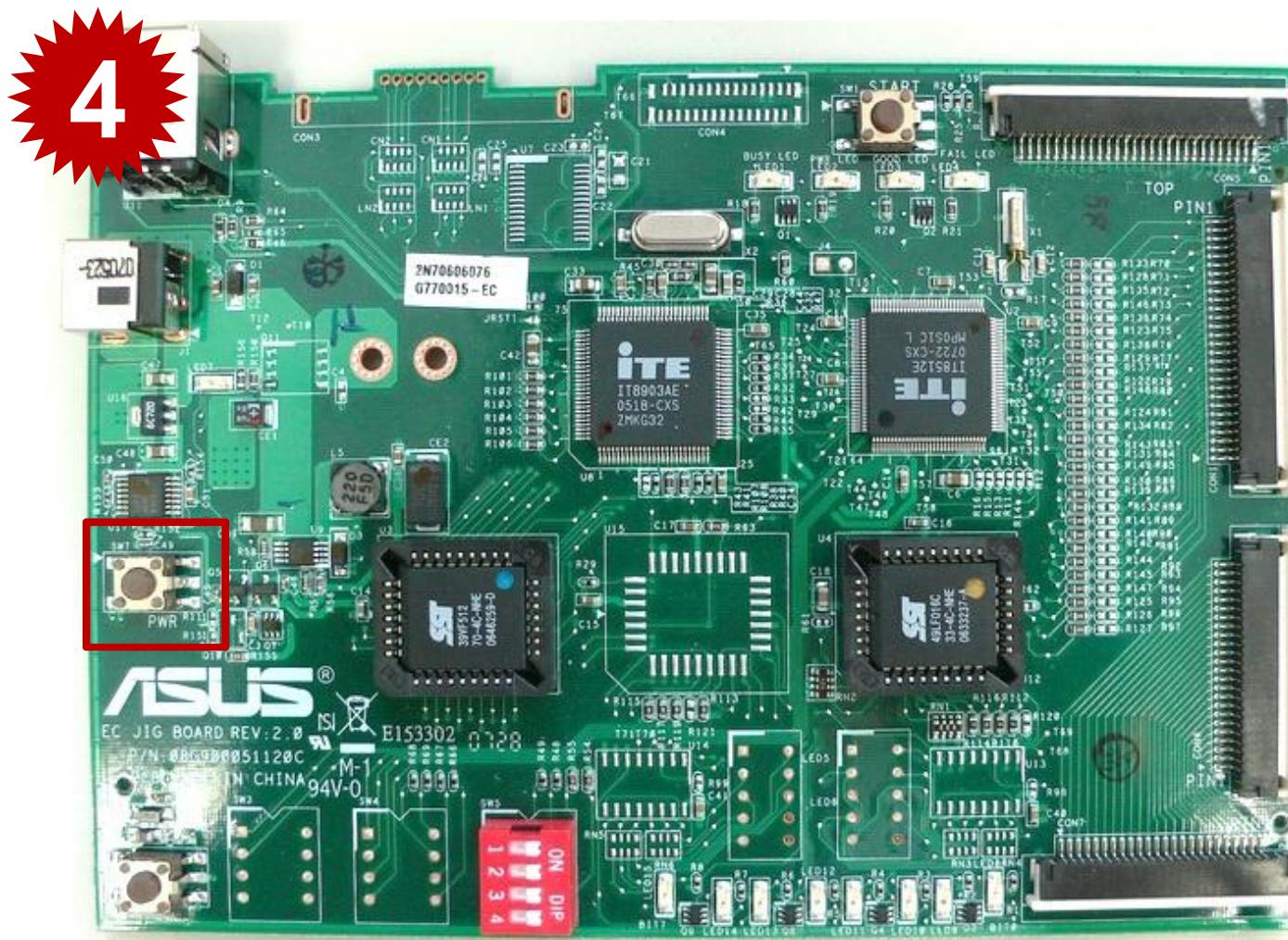
2. Press LoadFile icon to load BIOS ROM file and press AutoBurn icon to burn BIOS ROM file to JIG Board.





Flashing BIOS with JIG Board

3. After burning done, press SW7 again to turn off main power.





Flashing BIOS with JIG Board

Upload the ROM file to the target notebook

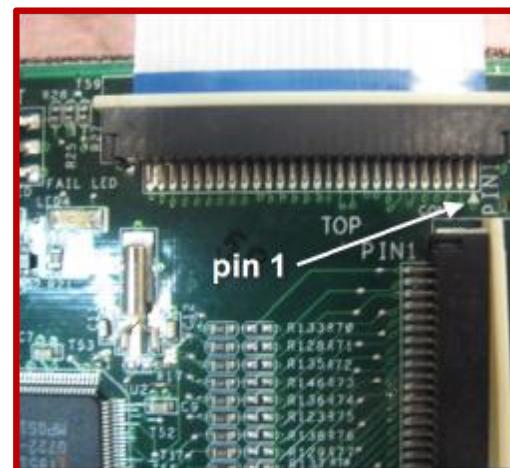
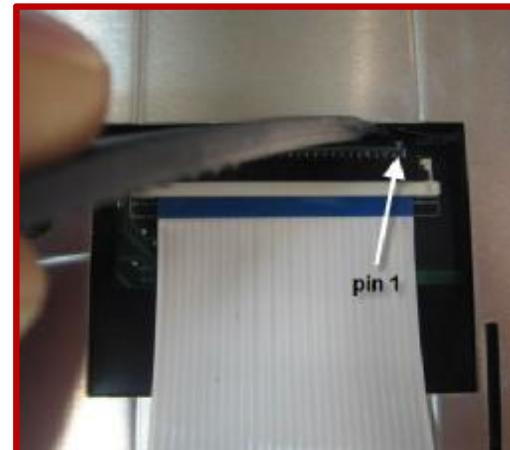
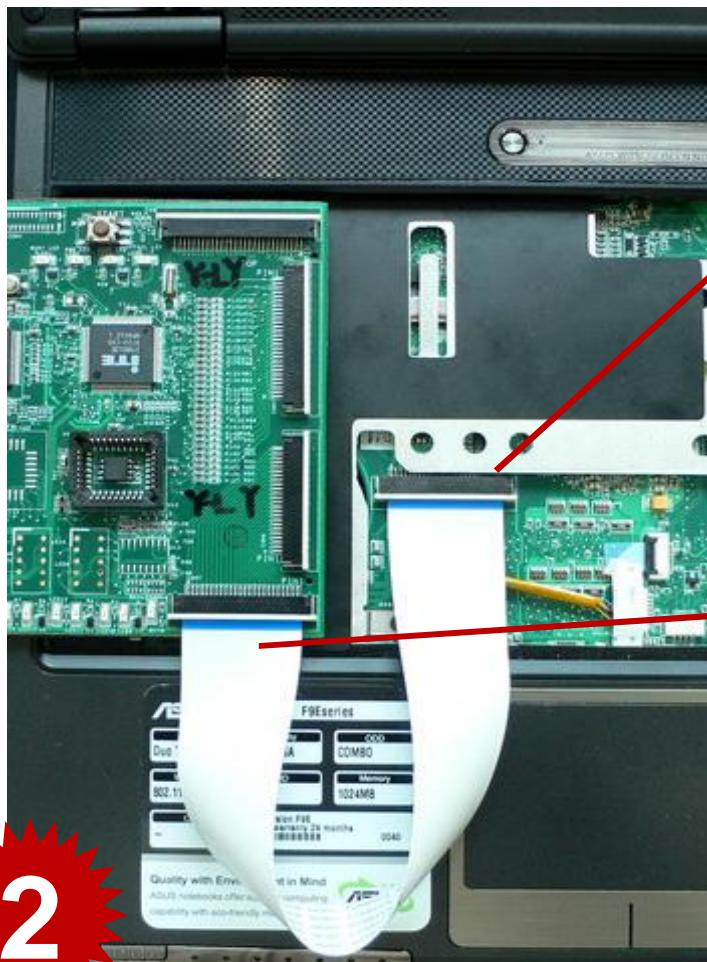
1. Remove the battery of the target notebook





Flashing BIOS with JIG Board

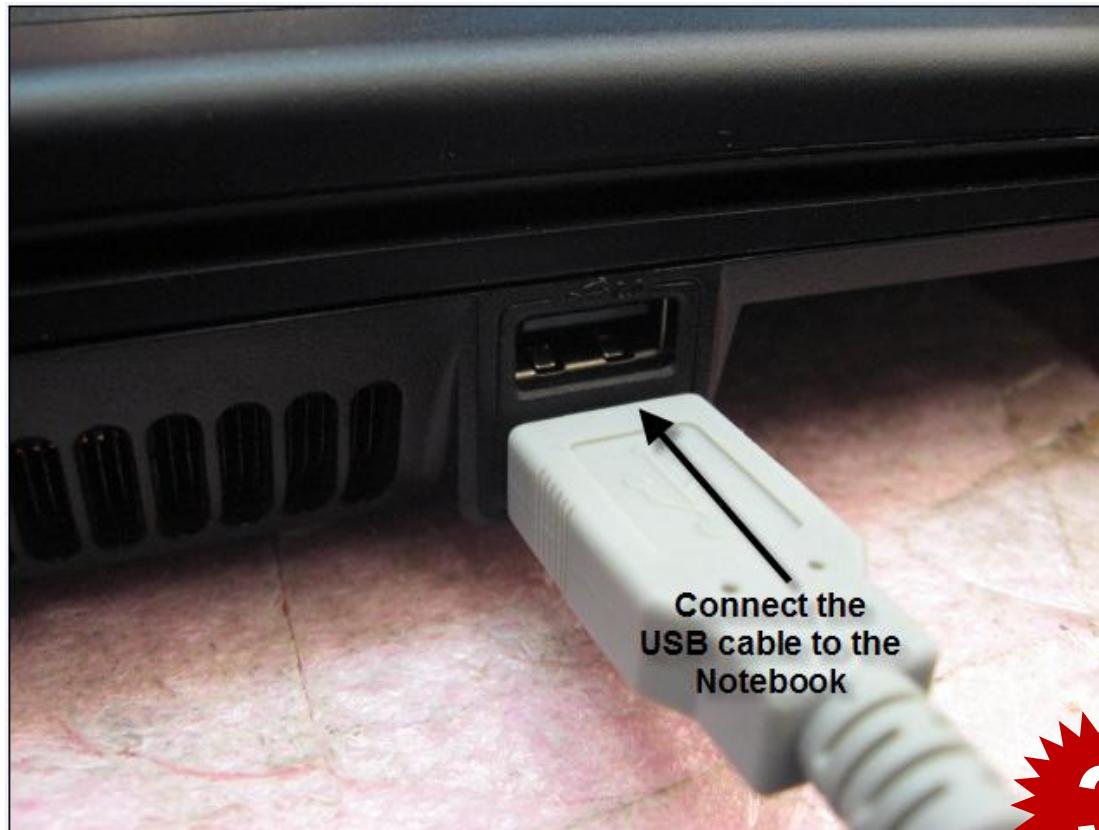
2. Connect the FPC cable between to the keyboard and Jig-Board connector.(connect both side on pin 1)





Flashing BIOS with JIG Board

3. Connect the USB cable on the Jig-Board and notebook.

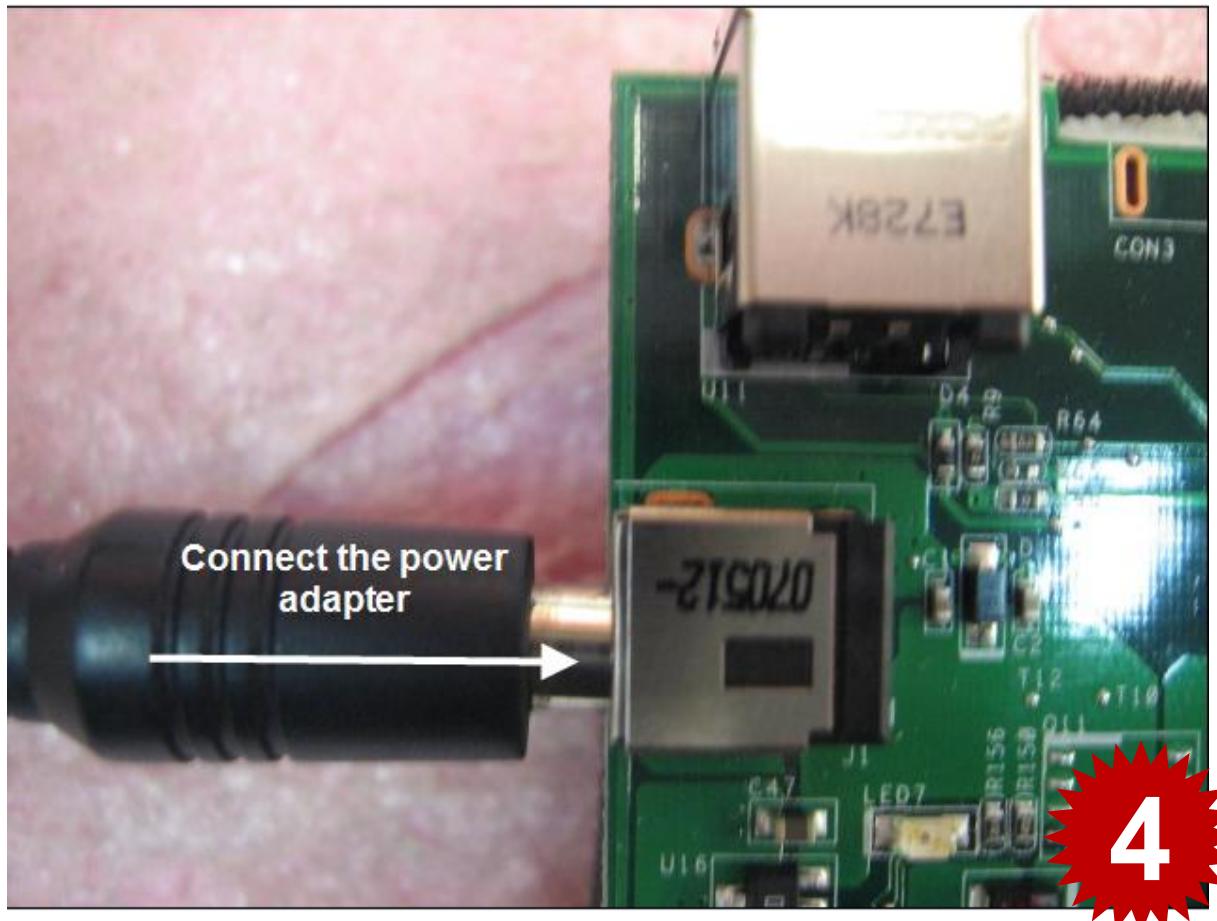


3



Flashing BIOS with JIG Board

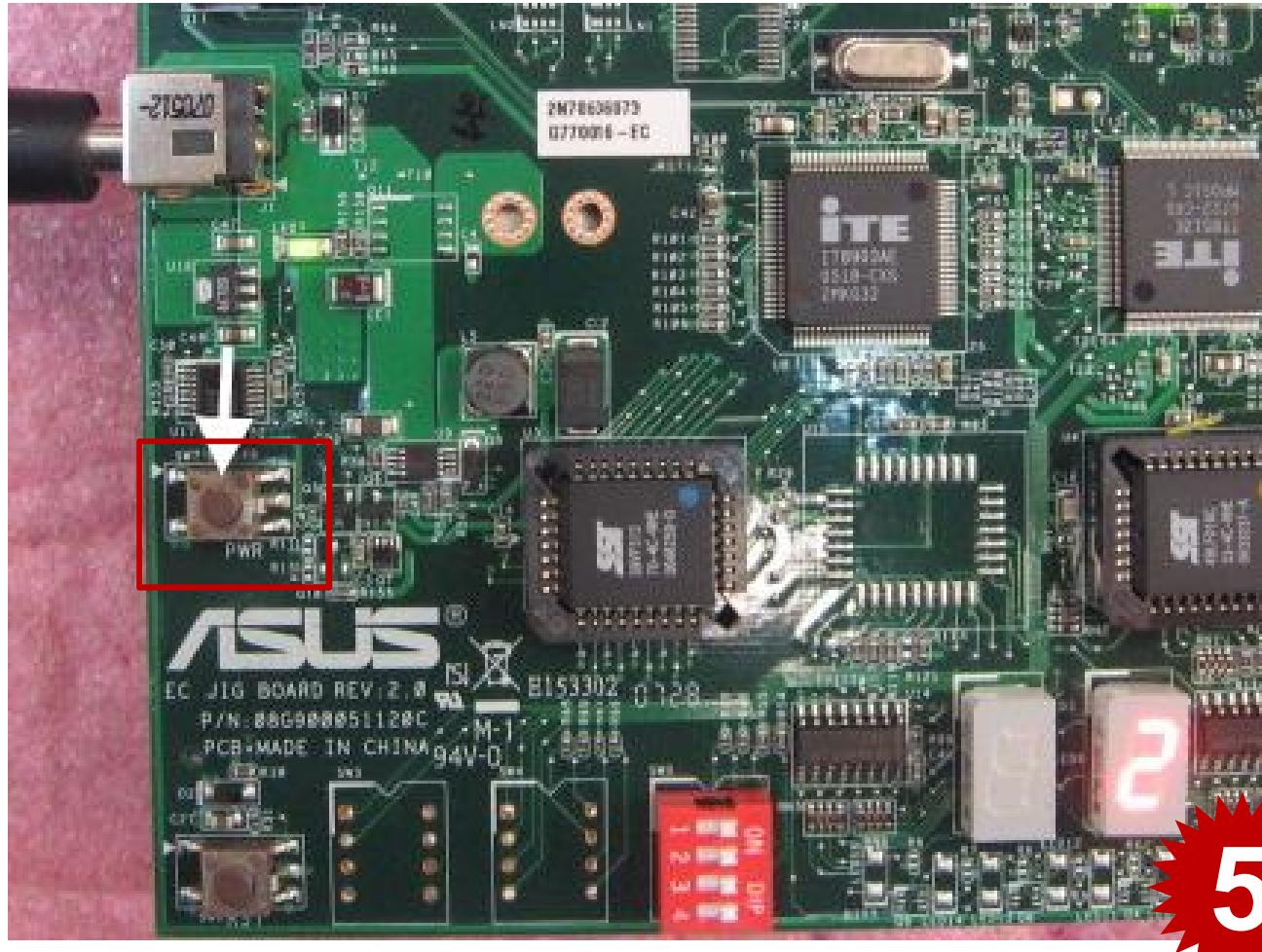
4. Connect the power adapter on the Jig-Board.





Flashing BIOS with JIG Board

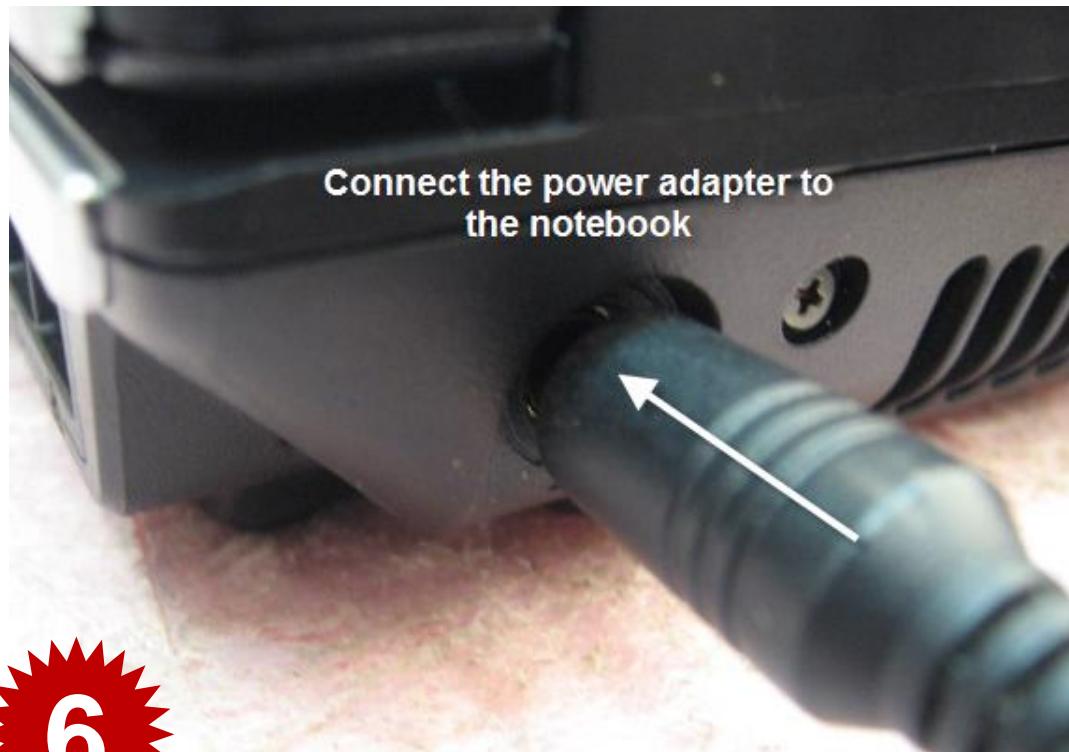
5. Turn the Jig-Board on by pressing the power button.





Flashing BIOS with JIG Board

6. The final connection is the power adapter into the notebook.



6

There is a connecting rule between the Jig-Board, notebook and adapters!!!! If you don't follow these steps, you can't upload the ROM file. Because the circuit needs to be closed by the notebook power.



Flashing BIOS with JIG Board

7. Press on the start button on the Jig-Board.





Message ID List

Message	Process	Note
AA	Wait for check KBS interface	The scenarios will influence by the following conditions: The utility did not detect the KSO9=0 The FPC cable connected to the connector with reverse side. The JIG Board crisis recovery data structure did not match the target keyboard connector define. Target system does not have the power source.
00	Flash erase	
10~1F	Flash Program	For 1M/2M flash
20~2F	Flash Verify	For 1M/2M flash
55	KBS test fail	The scenario will influence by the following conditions: The JIG Board crisis recovery data structure did not match the target keyboard connector define. The target system has other power sources before JIG Board SW6 turn on.
00~FF	Read ROM	For 1M/2M flash
88	Flash successfully	



Chapter 7.1

USB BOOT UP INTRODUCTION



Equipment Description

NO#	Equipment Description	ASUS Part Number	Quantity	Remarks
1	CRT MONITOR	20-520000282	1	
2	ENG_EZUSB BOARD R1.03	80-C218-0103	5	
3	USB CABLE	22-060000050	5	
4	Memory Stick Card	20-T004B1011	1	
5	SCANDISK SD MEMORY CARD	20-TT2600048	1	
6	Test CD	22-060002570	1	



Create USB boot-up DISK

Advantages:

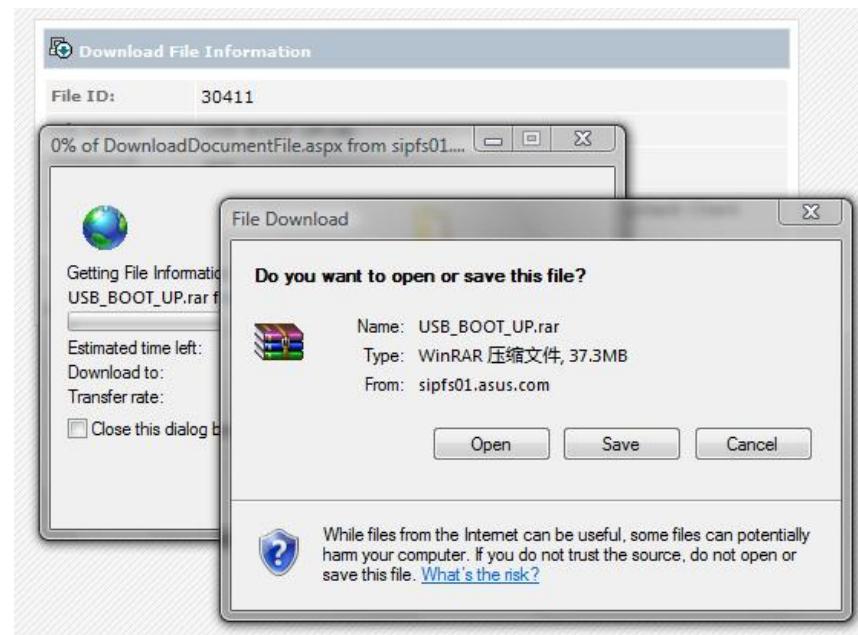
1. Boot directly from AI-flash and run test programs under FreeDOS, DO NOT need unplug HDD.
2. No need using HDD(A substitute method before NDSS online)

STEP 1: Download "USB Boot" from SIP

ASUS NOTEBOOK

Mode	File Name	Model	Update date
FreeDOS	NDDOS_1118.GHO	182	2008.11.18
Windows	Windows Main Program		2008.9.22

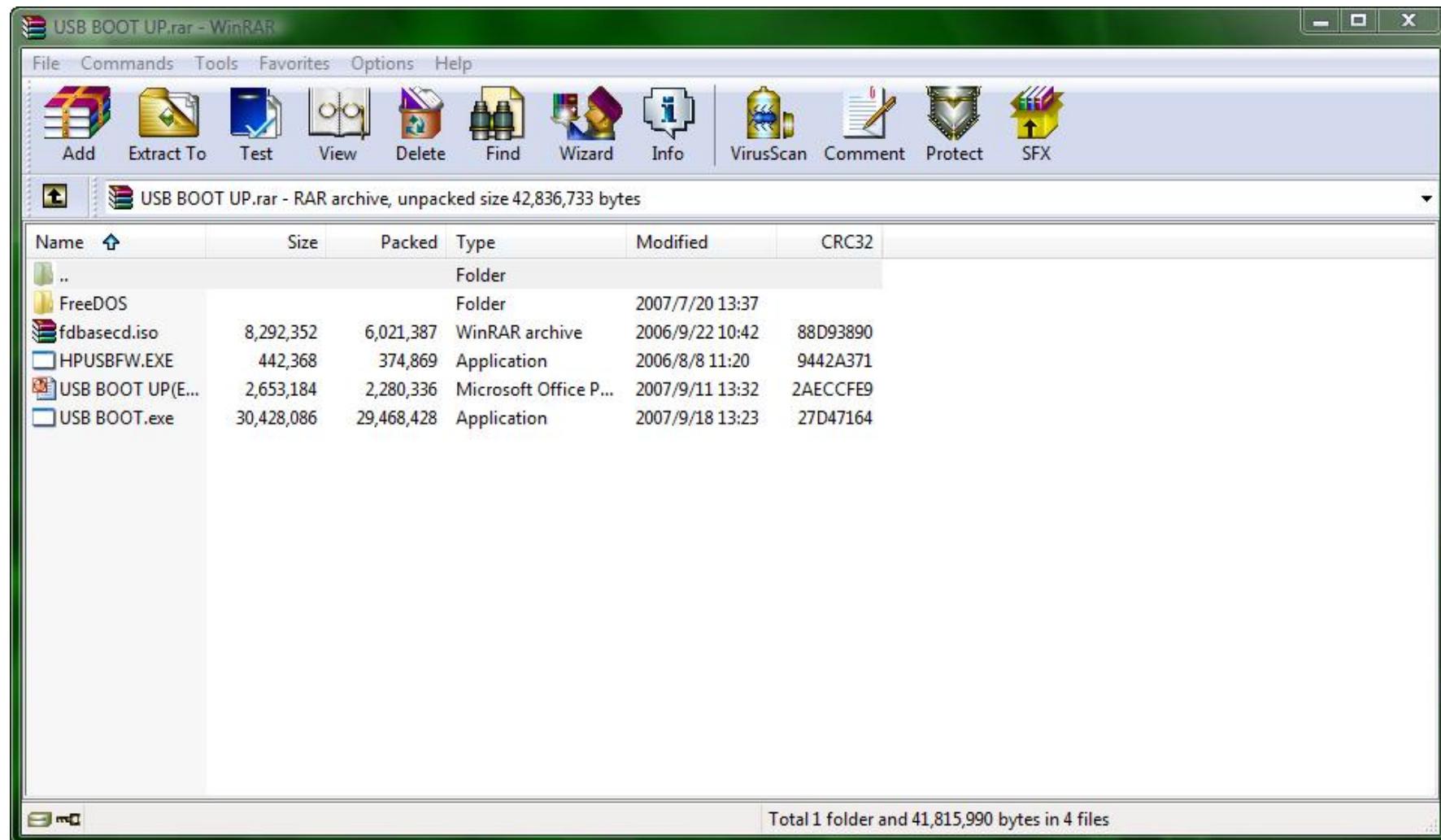
Serial	Model Number	PartNumber (TSC)	BIOS	Test Program	TOD	S.O.P.	Repair Guide (GB)	Thumbnail Guide (TS)
A3Ac	NIN	212	A3Ac.rar	DOS	TOD	Available	Repair Guide	EN
A3Fp	NDF		A3Fp.rar		TOD	Test SOP	Available	Repair Guide
A3H	NFM	212	A3H.rar		TOD	Test SOP	Available	Repair Guide
A3Vg	NFK	216	A3Vg.rar		TOD	Test SOP	Available	Repair Guide





Create USB boot-up DISK

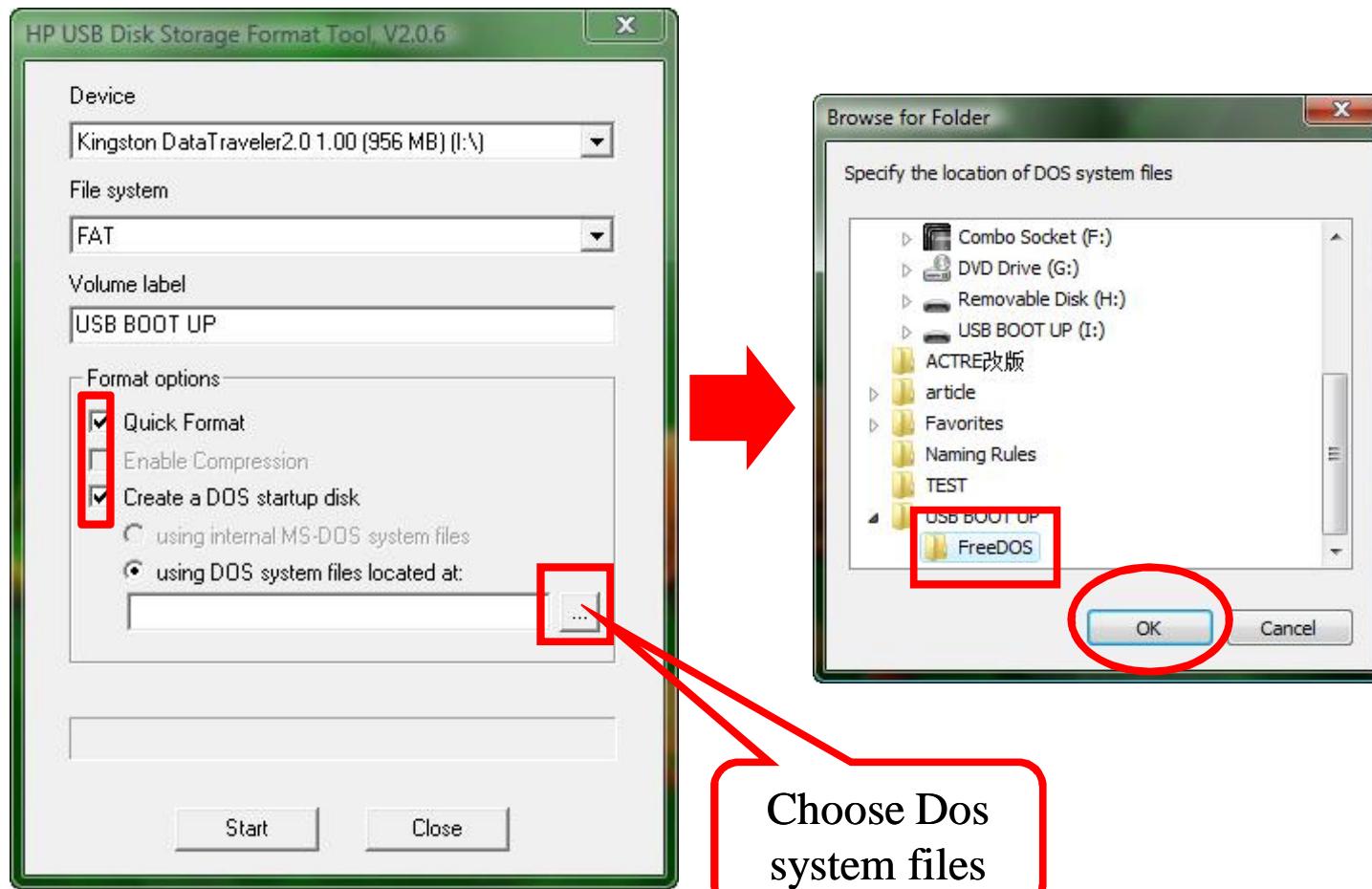
STEP 2: Extract the RAR file to any folder(eg. extract to E:\)





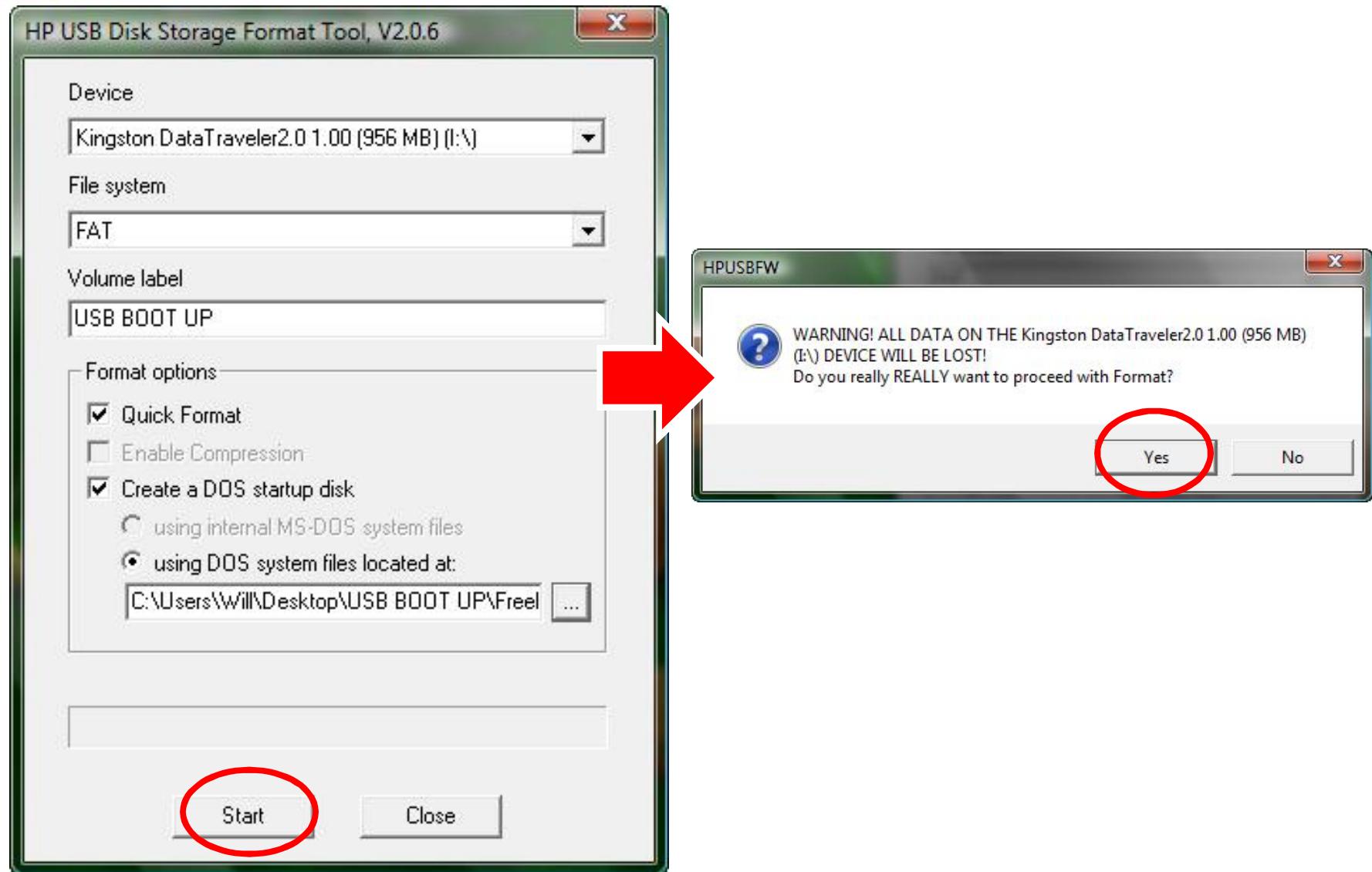
Create USB boot-up DISK

STEP 3: Use **HPUSBFW.EXE** to Format AI_FLASH and create a DOS startup disk





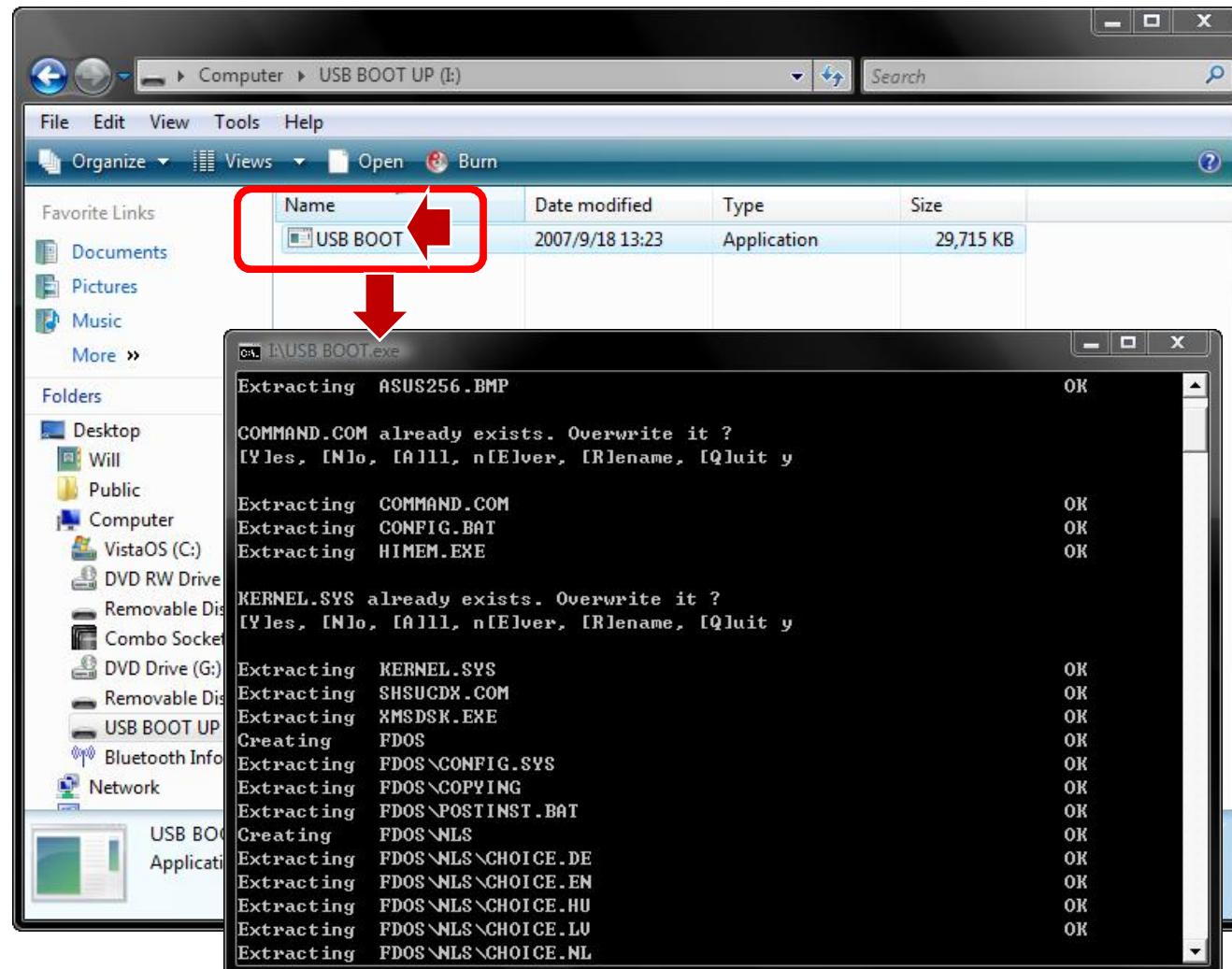
Create USB boot-up DISK





Create USB boot-up DISK

STEP 4: Copy **USB_BOOT.EXE to **A:\FLASH** and double click it**





Create USB boot-up DISK

STEP 5: Download Test Program from SIP

The screenshot shows the ASUS Service Information Portal (SIP) interface. On the left, there is a table of files categorized by model (G2Sg, G5, G7, L5) and type (NGP, Survey, Document, Admin, Project). The 'G70SG' row is highlighted, and the 'G70SG.RAR' file is selected and highlighted with a red box. On the right, a 'Download File Information' window is open, showing details for the selected file: File ID: 58056, File Name: G70SG.rar, Download Count: 1. A note states: 'If the network is unstable, you may use SIP Document Client instead.' Below this window, a 'File Download' dialog box is displayed, asking 'Do you want to open or save this file?'. The dialog shows the file name: G70SG.rar, type: WinRAR archive, 1.72MB, and source: sipfs01.asus.com. It includes 'Open', 'Save', and 'Cancel' buttons. At the bottom of the dialog, a warning message reads: 'While files from the Internet can be useful, some files can potentially harm your computer. If you do not trust the source, do not open or save this file. [What's the risk?](#)'

ASUS Service Information Portal
Rock Solid • Heart Touching

Support	Repair	Learning	Project	Survey	Document	Admin	Proj
	G2Sg	NGP		G2Sg.rar			
	G50V		206	G50V.rar	G50		
G5	G50Vt			G50Vt.rar	G50		
	G50G						
	G71V		206	G71V.rar			
G7	G70S	NKT	207	G70S.rar	G70		
	G70SG		202	G70SG.RAR	G70		
	G71G						
L5	L50VN		210	L50VN.RAR	L50		
	M51KR	NN9		M51KR.RAR	M51		
	M51Ta			M51Ta.RAR	M51		
	M51TR		207	M51TR.RAR	M51		
	M50SA	NLT	204	M50SA.RAR	M50		
	M50VM		210	M50VM.RAR	M50		
	M50VN			M50Vn.RAR	M50		
	M50Sr	NLT		M50Sr.rar			
	M50SV	NED	209	M50SV.RAR			

All contents are Copyright © 1992-2004 AsusTek Computer Inc. All rights reserved.

Download File Information

File ID: 58056
File Name: G70SG.rar
Download Count: 1
Note: If the network is unstable, you may use SIP Document Client instead.

Download From: Taiwan Europe

File Download

Do you want to open or save this file?

Name: G70SG.rar
Type: WinRAR archive, 1.72MB
From: sipfs01.asus.com

Open Save Cancel

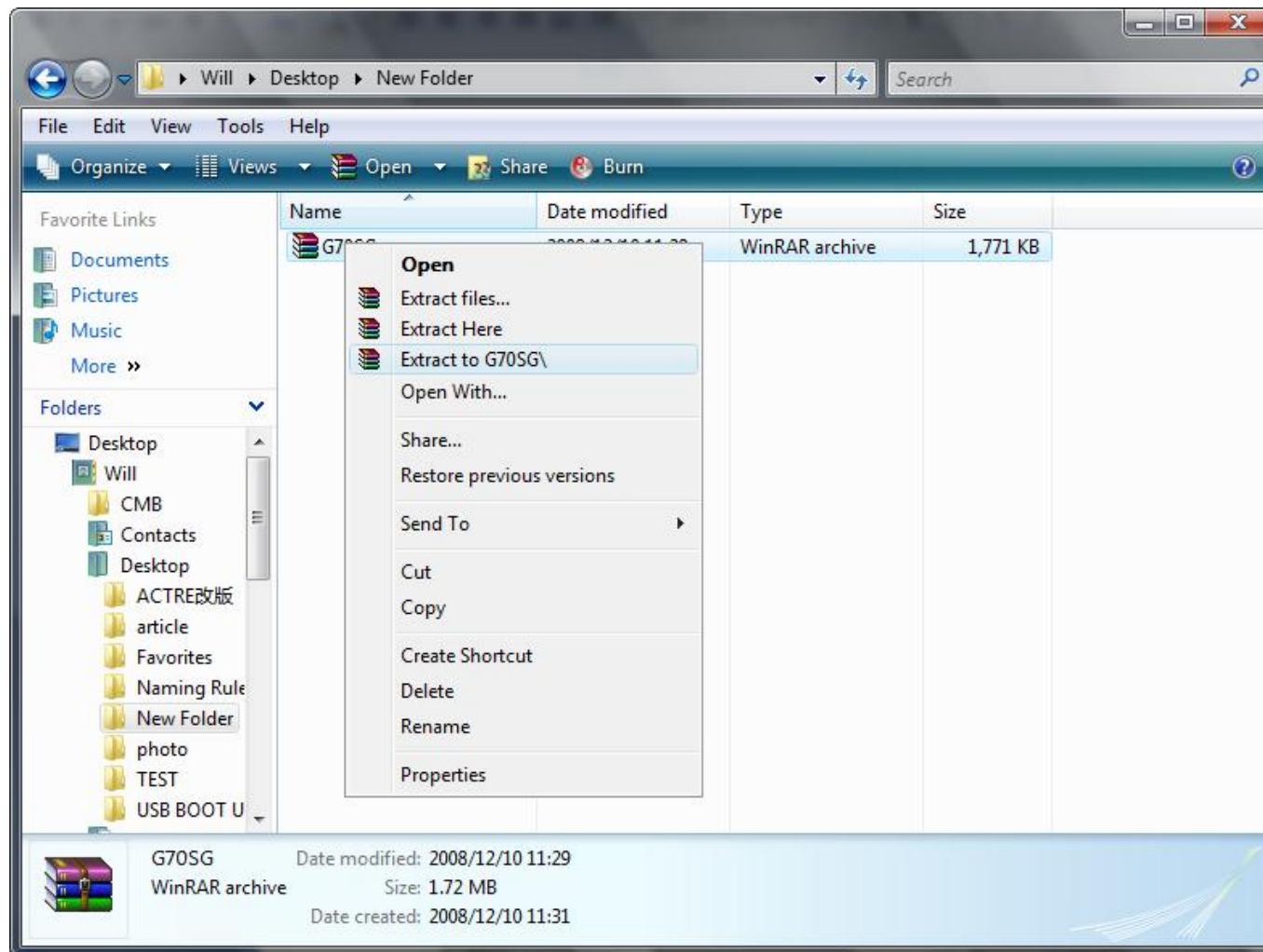
While files from the Internet can be useful, some files can potentially harm your computer. If you do not trust the source, do not open or save this file. [What's the risk?](#)

Webmaster Mail box



Create USB boot-up DISK

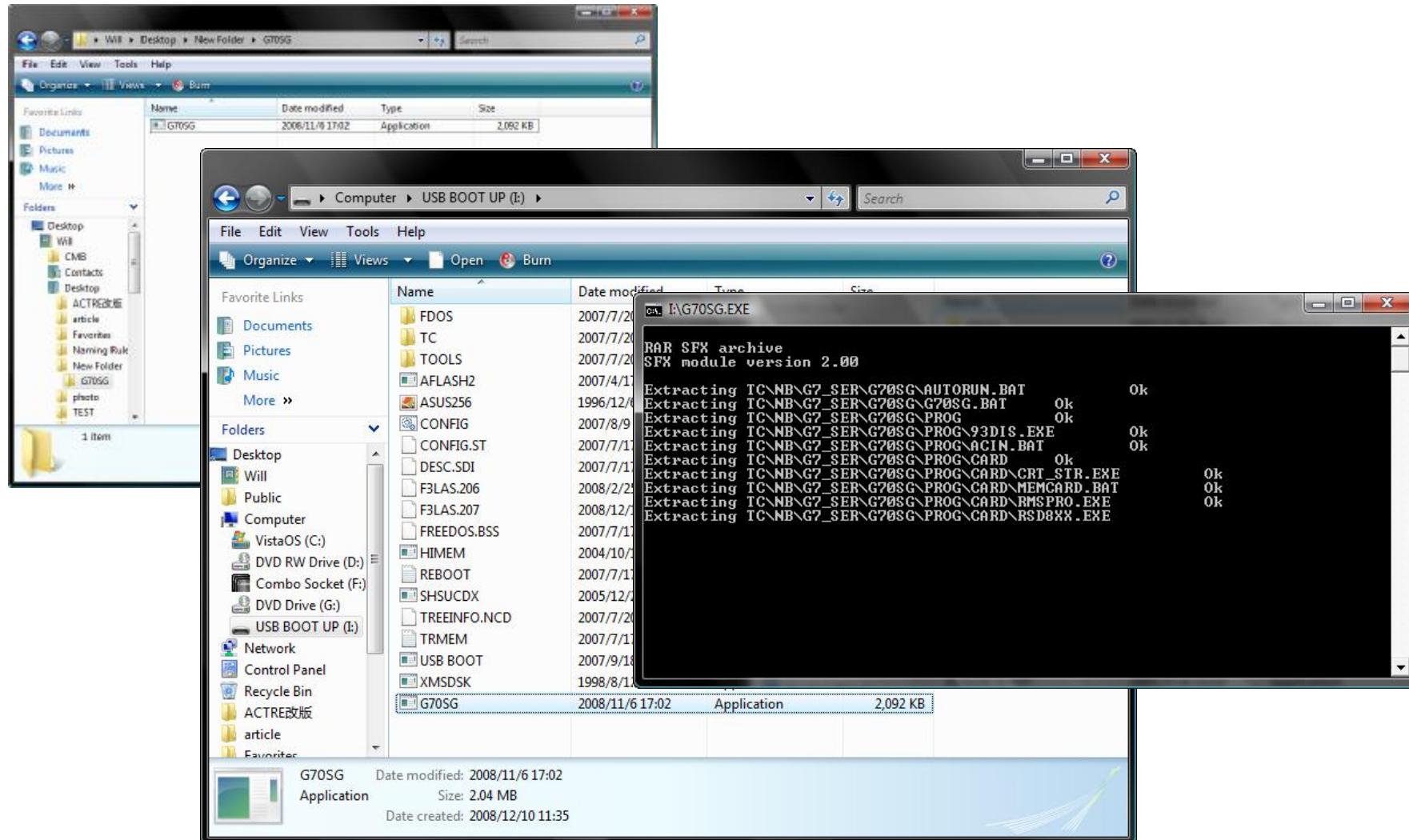
STEP 6: Extract the rar file just downloaded to any folder to get an executable self-extracting file





Create USB boot-up DISK

STEP 7: Copy the file to the root of AI_FLASH, and double click it





Chapter 7.2

Test in FreeDOS



Attention

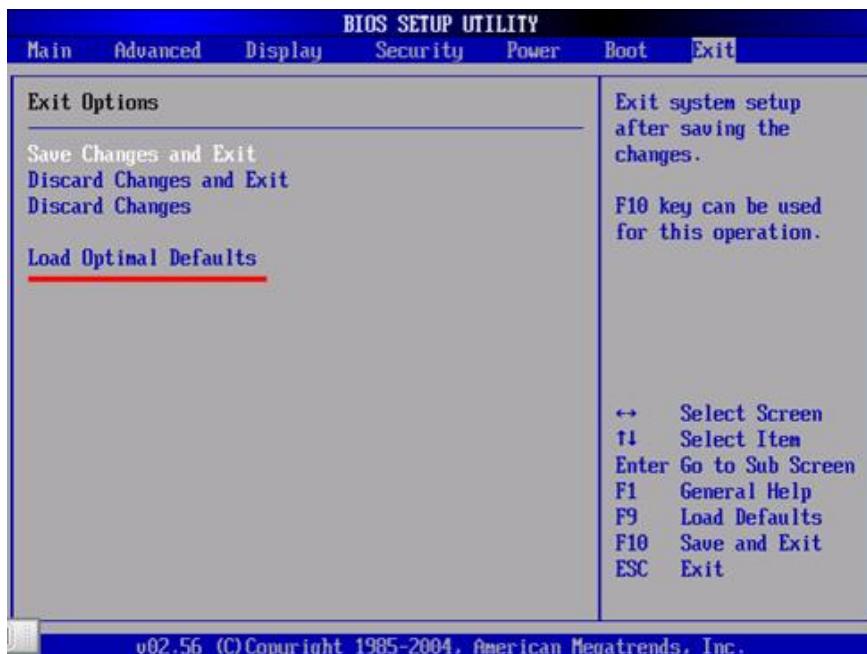
1. Connect the test fixture correctly.
2. Please put on the battery and connect the power adaptor to DC power input jack before run the test program.
3. If it happens in problem, please inform the test supervisor. For safety, Turn off main power when Test idling or during break time.



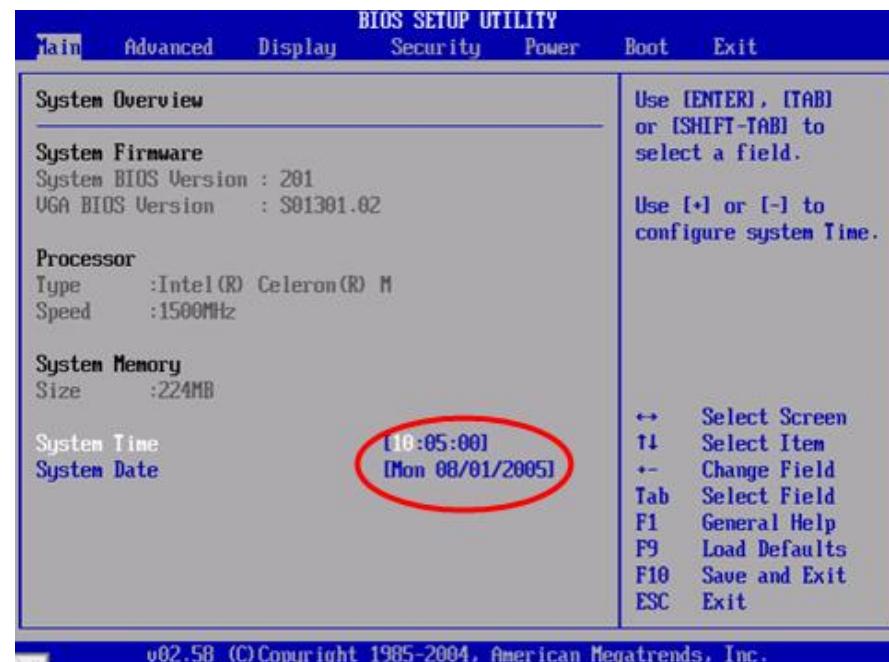
Test Setup

1. Press Power Switch then press the 'Power Button' to make power on.
2. NB system BIOS allows users to change some system hardware/function settings during POST (power on self test) stage. Users may hit **<F2>** key to enter SETUP mode in POST, the setup feature is categorized into 6 menus described as below.

Step 1. Load Setup Defaults



Step 2. Check/Setup System time/date





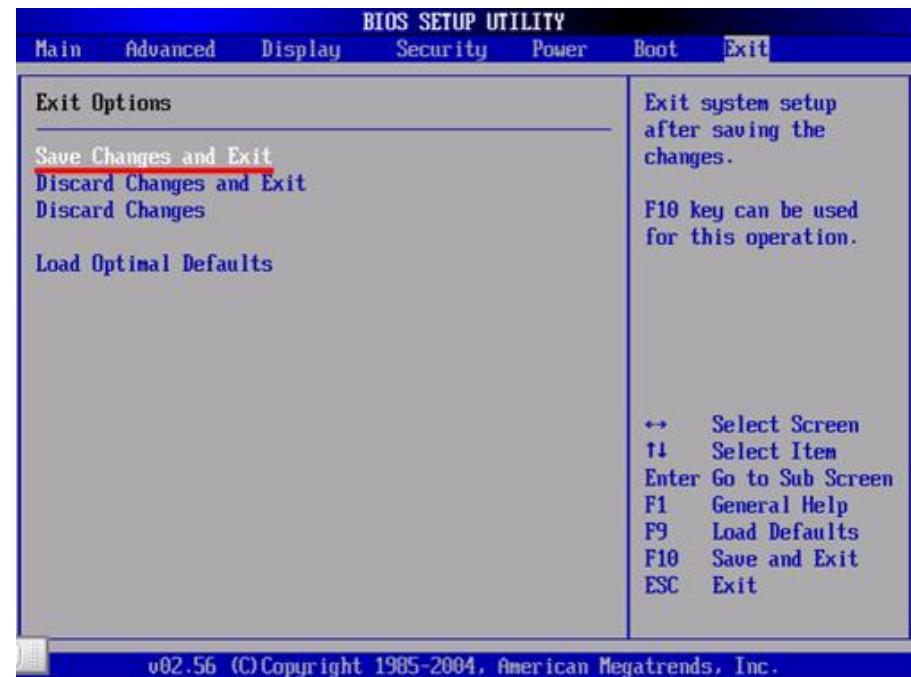
Test Setup

Step 3. Setup Boot Device Priority

Boot -> Boot Device Priority->1st Boot Device [Hard Disk]



Step 4. Save Changes and Exit, then System will reboot.





Enter FreeDOS Mode

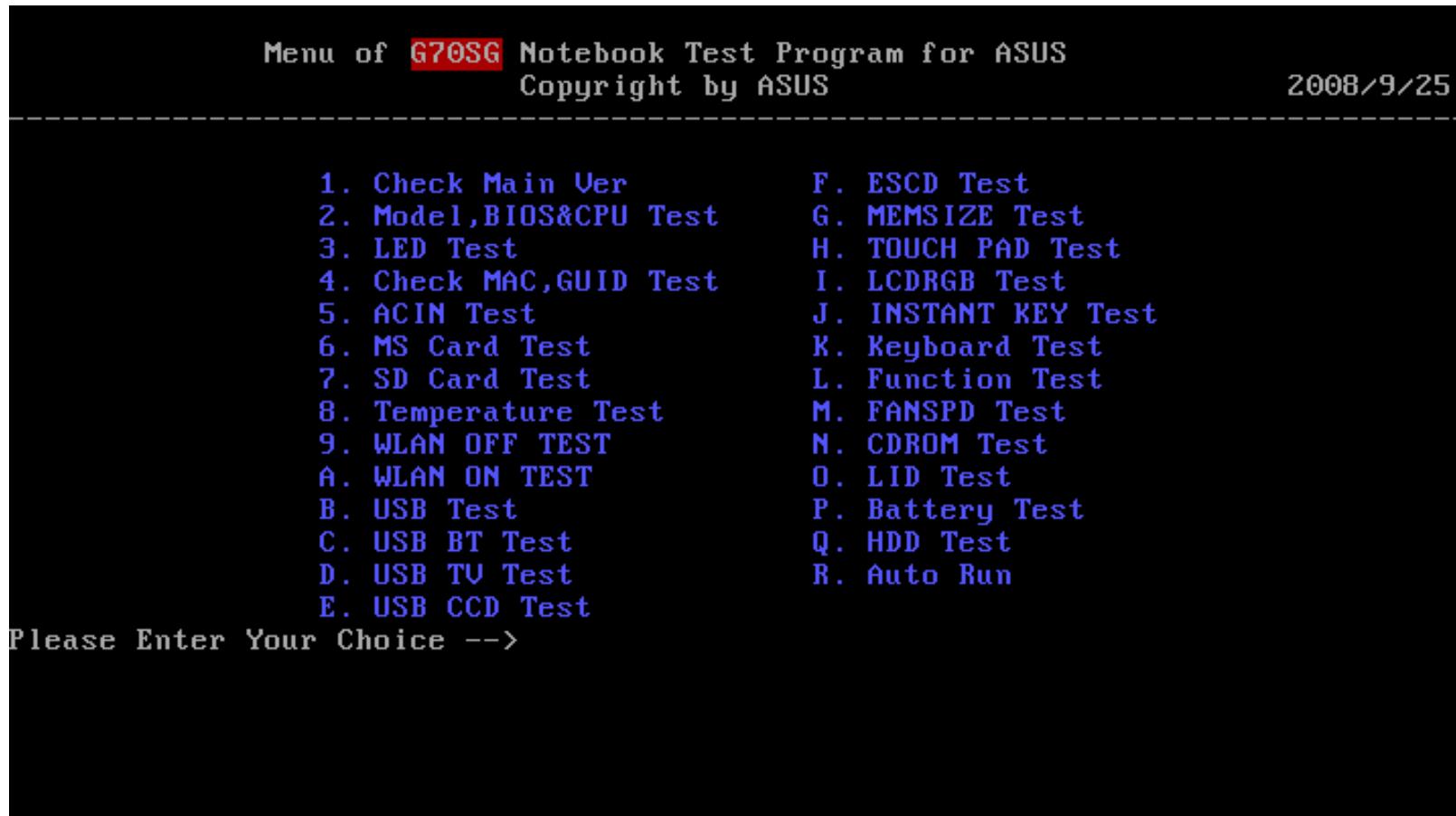
1. Boot up the system with the Test USB Boot-up Disk.
2. Press ESC Key, then select booting from U Disk.
3. Entering FreeDOS.
4. Press ESC then see the FreeDOS UI.
5. Choose Testing Model. **EX. TC->NB->G7_SER->G70SG**
6. Select the BAT file of Testing Model, shown as below.





Enter FreeDOS Mode

7. Select the Function Test Item according to the TEST Program Menu.





Model and BIOS Test

1. Check Product type
2. Check BIOS Version

```
DMI Utility Rev 1.26          Built Date:06/06/2003
-----
SMBIOS Structure Table Address:F000:9680
Entry Point:F000:C190
DMI Revision:2.4
Structure Numbers:34

M/B Manufacturer : ASUSTeK Computer Inc.
M/B Product      : G70Sg
M/B Version      : 1.0
BIOS Vendor      : American Megatrends Inc.
BIOS Version      : 201
BIOS Release Date : 07/25/2008
System Manufact. : ASUSTeK Computer Inc.
System Product   : G70Sg
System Version   : 1.0
UUID             : 412181DD-5F49-AA93-1480-0022154C1C85

Latest update:-
Please check the Produce,
UUID and BIOS Version.
T.C.

Return Code = 1
```

1



Confirm the CPU SPEC

1. Confirm the CPU SPEC.
2. Confirm the current date/ time.

```
SMBIOS Structure Table Address:F000:9680
Entry Point:F000:C190
DMI Revision:2.4
Structure Numbers:34

Socket Type      : Socket 478
Manufacturer     : Intel
Version          : Intel(R) Core(TM)2 Duo CPU T9300 @ 2.50GHz
Max./Cur./Ext.(MHz) : 2500/2500/200

Current date is Thu 10-09-2008
Current time is 1:11:19.46 pm
```

Please confirm the CPU Spec.
and current date/time.

T.C.

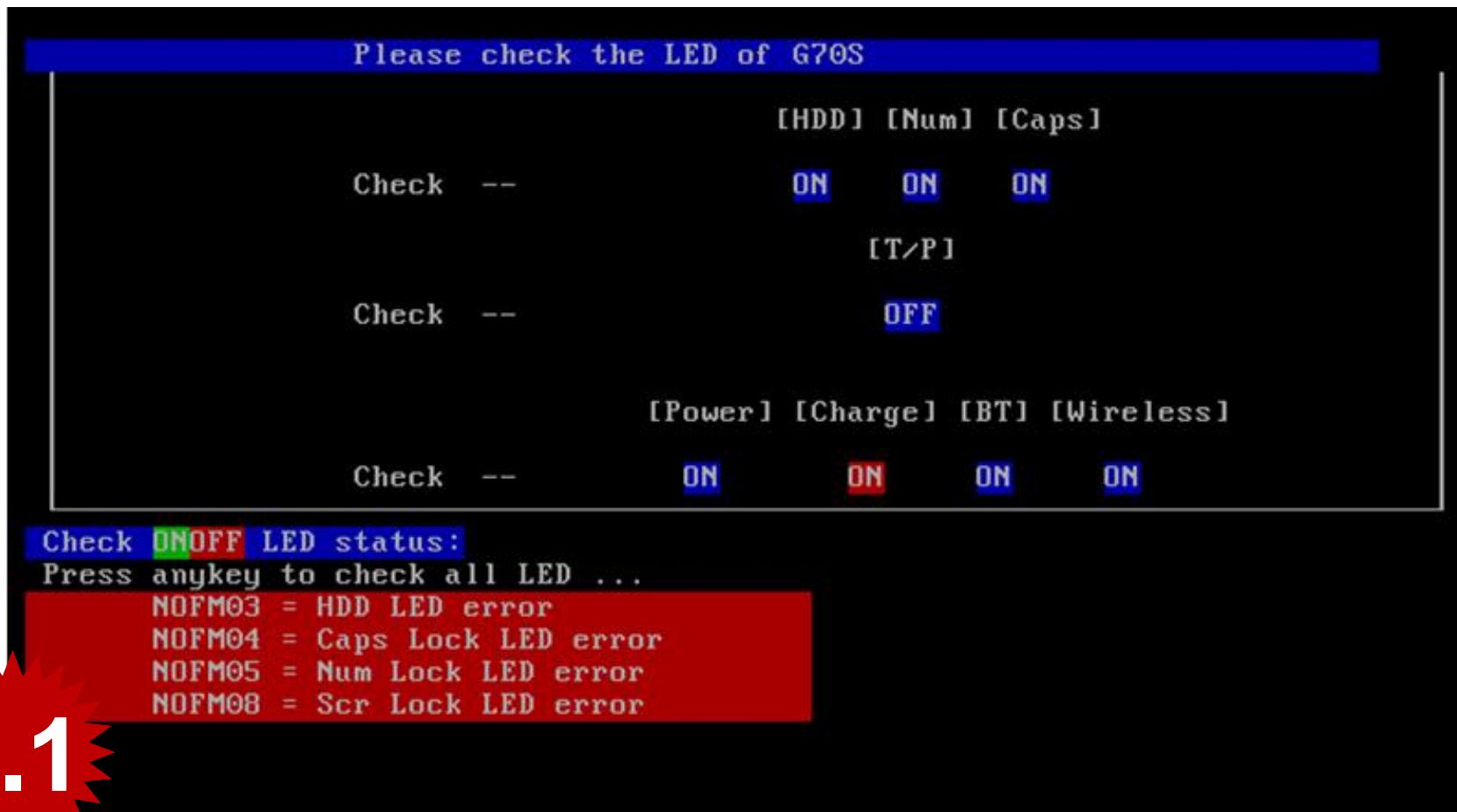
2

ASUS Confidential



LED Test

- Check the light of LEDs, press any key to test next LED. Ensure the status LEDs function properly.
- If the LEDs are different to the screen display, that means test fail.





LED Test

▷ Check the light of HDD LED, then press 'H' to exit.

Build DATE:2006-03-14

華碩電腦

HardDisk Utility, Copyright by ASUS Rev1.22

技研中心

Test HDD LED...

3.2

ASUS Confidential



CHK 1394&MAC

Check 1394 ID number is correct.

```
Build DATE:2007-02-14
ASUS          BIOS Tool, Copyright by ASUS Rev2.06          Diags
=====
CNFG block size= 0100
Read Offset E0 ~ E7, Data= 001E8C0001440F6D

1394 ID=001E8C0001440F6D

[?] Please check the GUID with ??
[?] label of board. ??
[?] T.C. ??

Return_Code=-1
```

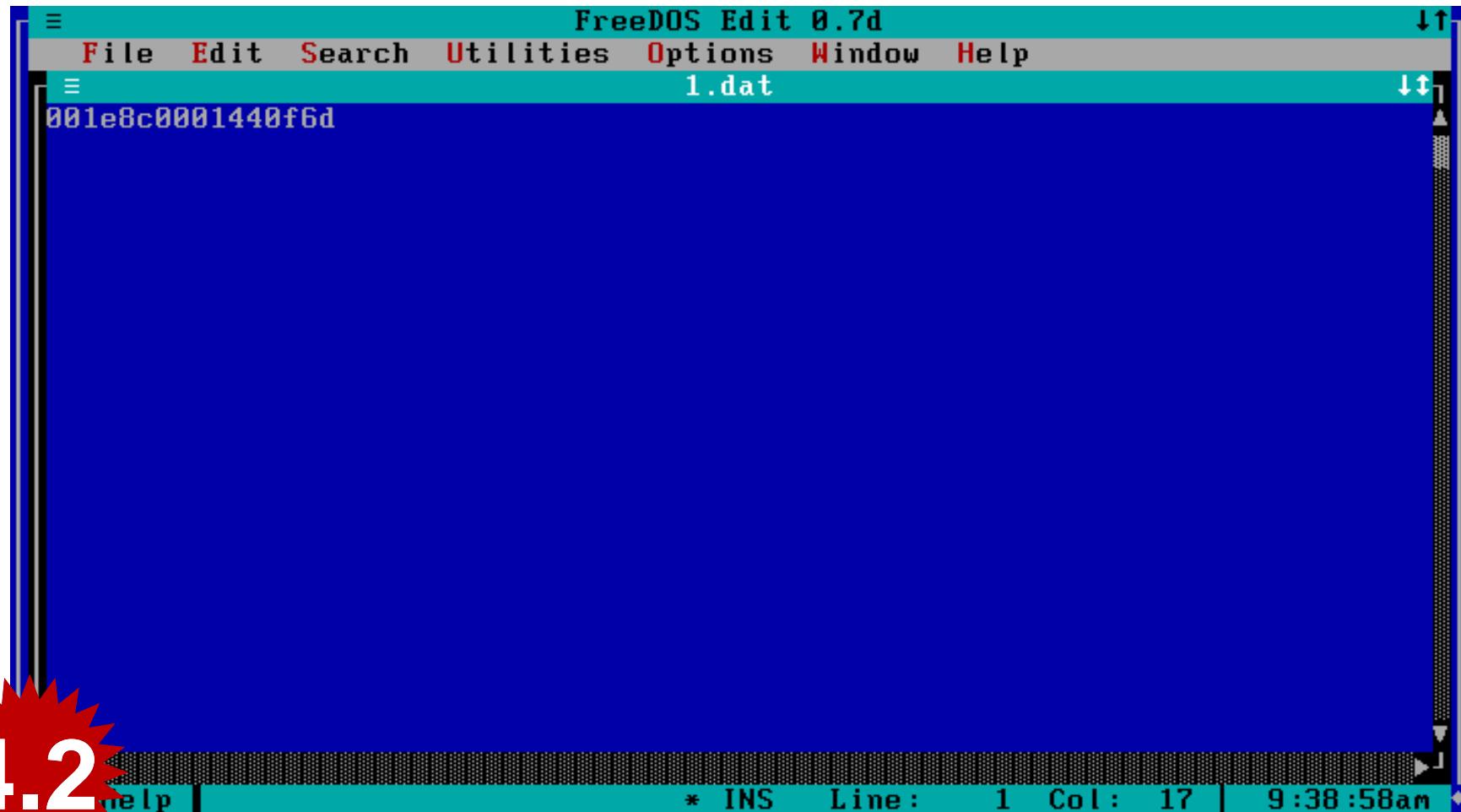
4.1



CHK 1394&MAC

▷ Input 1394 address

▷ **Please type the right 1394 address. Then save this file!!**



4.2

ASUS Confidential



CHK 1394&MAC

Check MAC address is correct.

```
Build DATE:2007-09-21
ASUS          Serial EEPROM Utility, Copyright by ASUS Rev1.92      Diags
=====
Attansic L1/L2
Bus_No = 02
Device_No = 00
Function_No = 00
=====
MAC Address -> 001D609E8290

001d60
9E8290

? Please check the MAC@ with ?
? label of board. ?
T.C.

Return_Code=-1
```

4.3

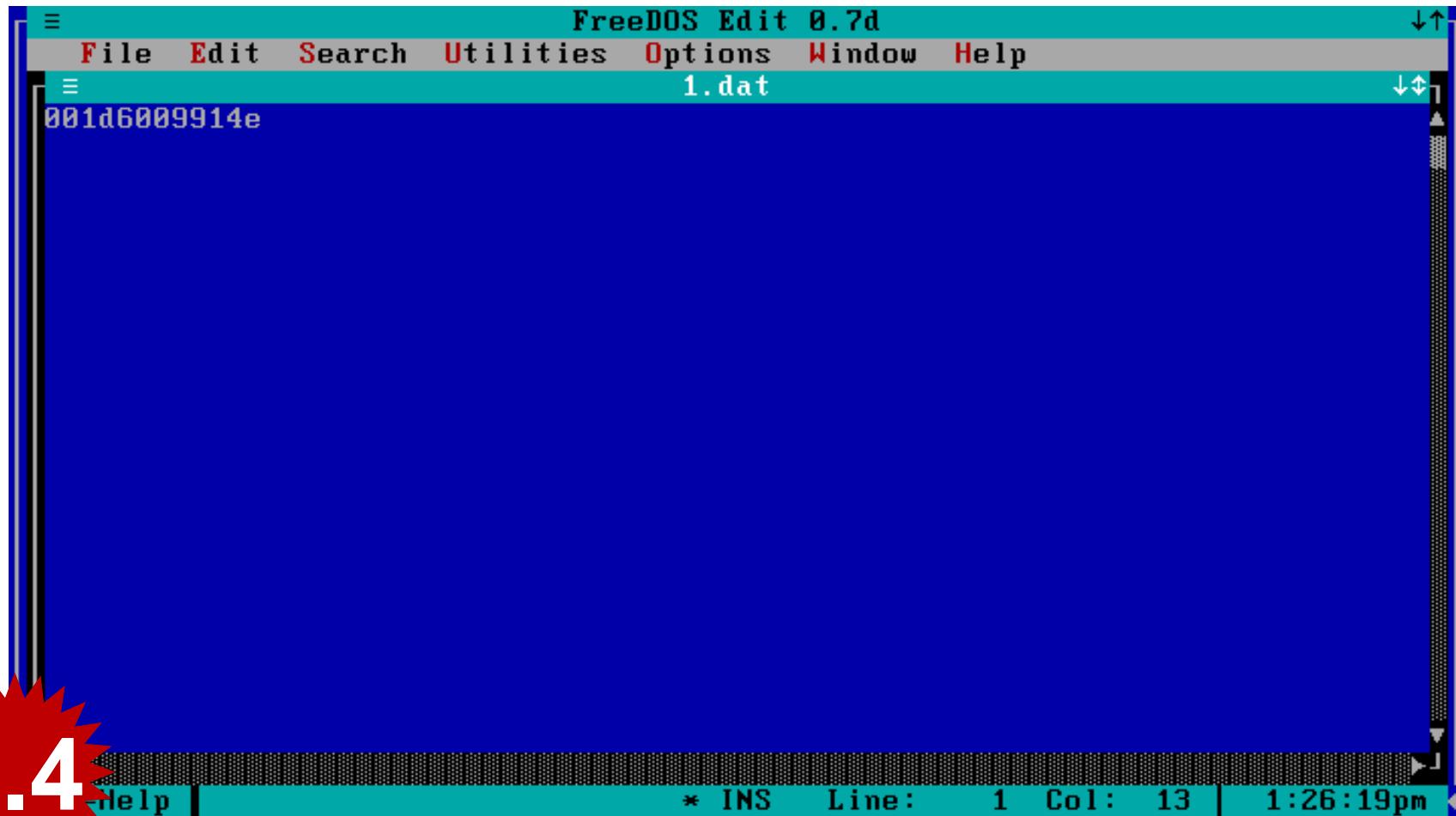
ASUS Confidential



CHK 1394&MAC

☐ Input MAC Address

☐ Please type the right MAC address. Then save this file!!

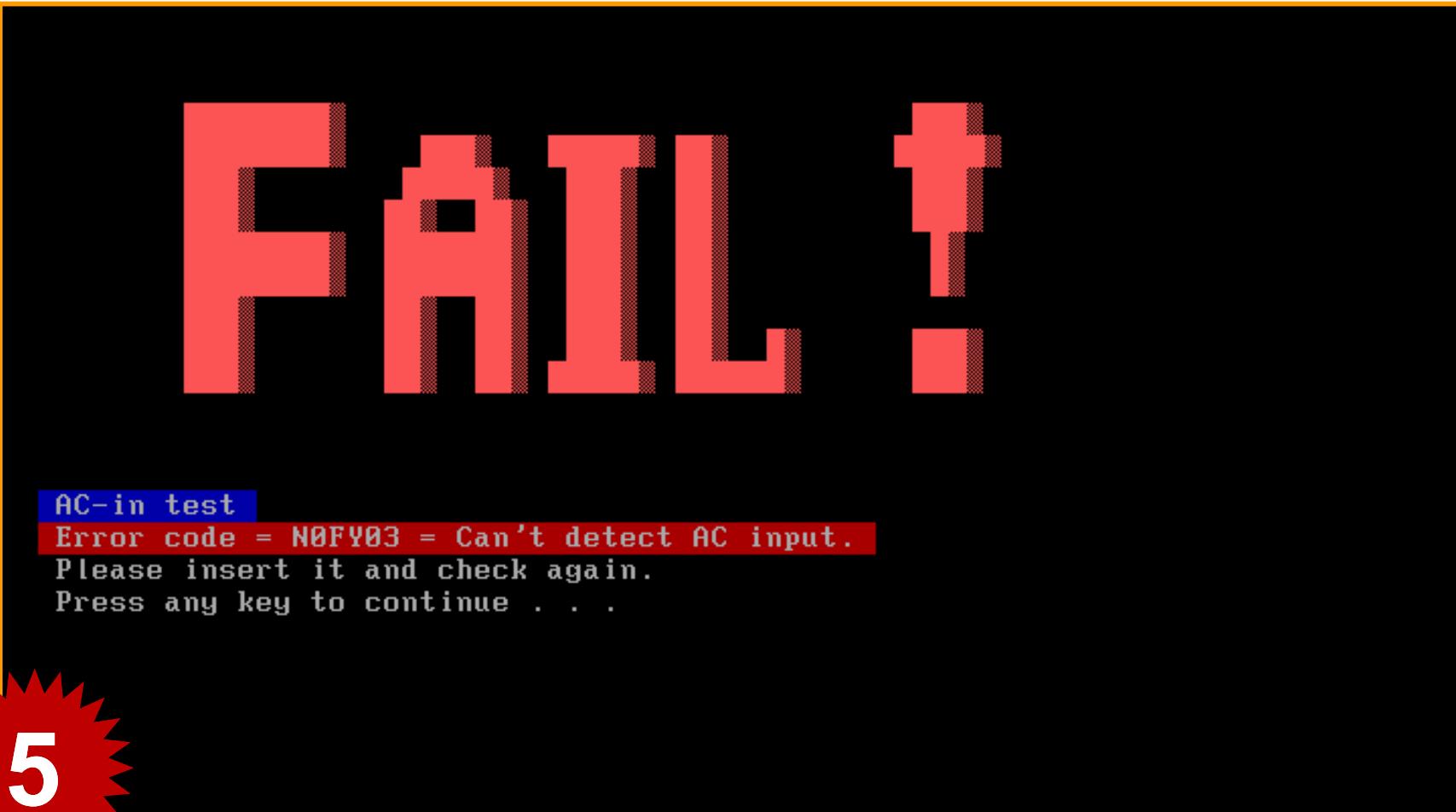


4.4



AC-IN Test

Insert the AC input to check. Test fail will show this PIC



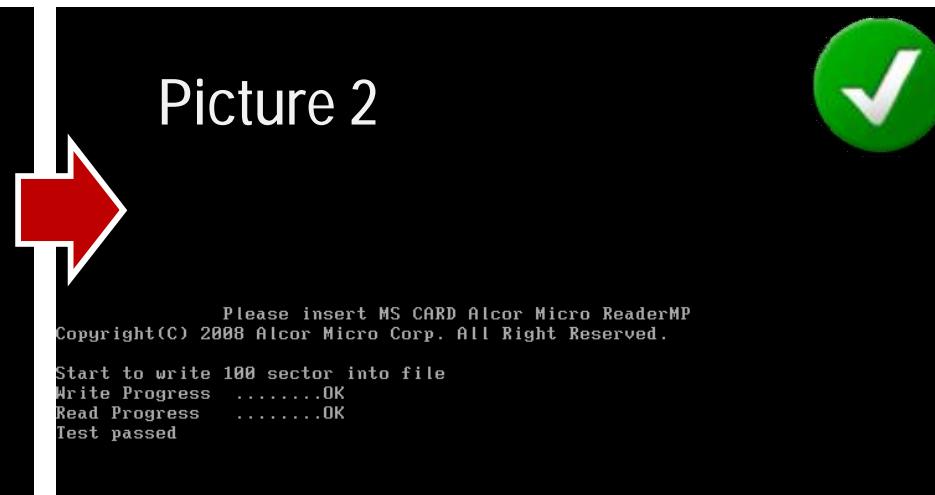


MS CARD Test

Please insert the MS-card into Card Reader (Picture 1)

Picture 1

Please insert MS CARD



Picture 2



Test fail will show this PIC

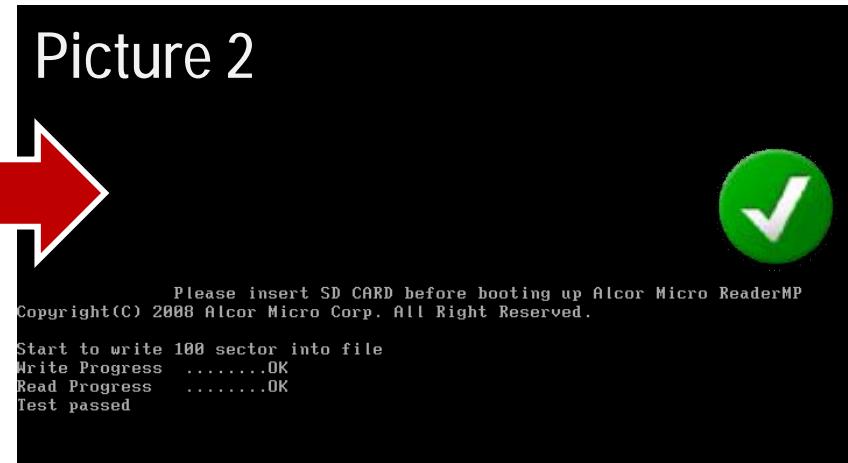


SD CARD Test

Picture 1



Picture 2

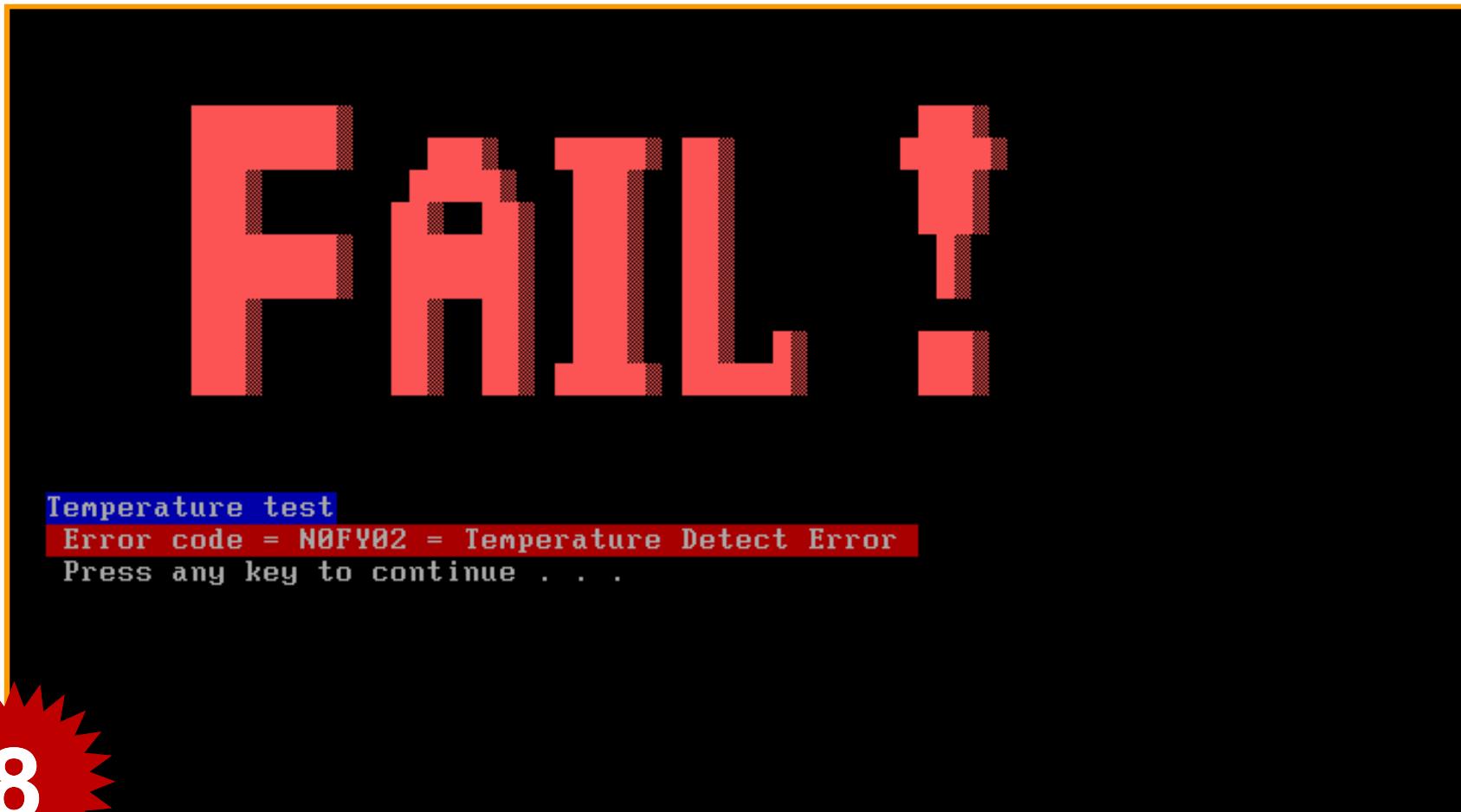


Test fail will show this PIC



Temperature Test

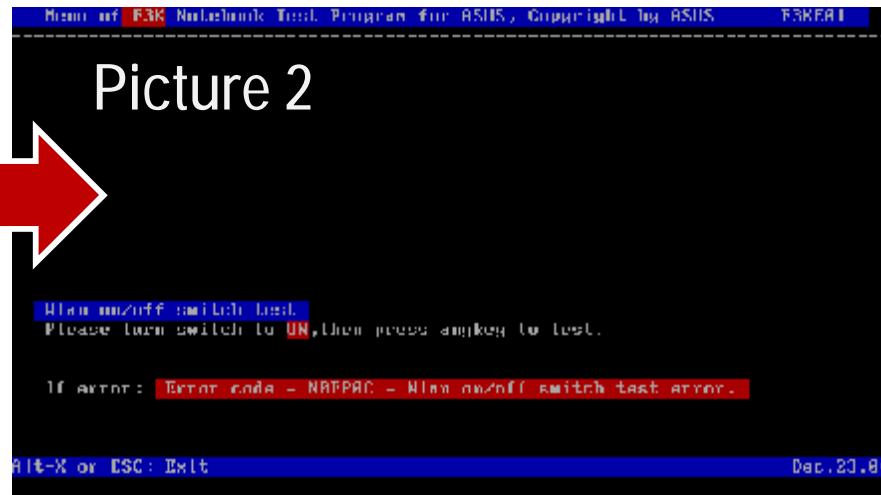
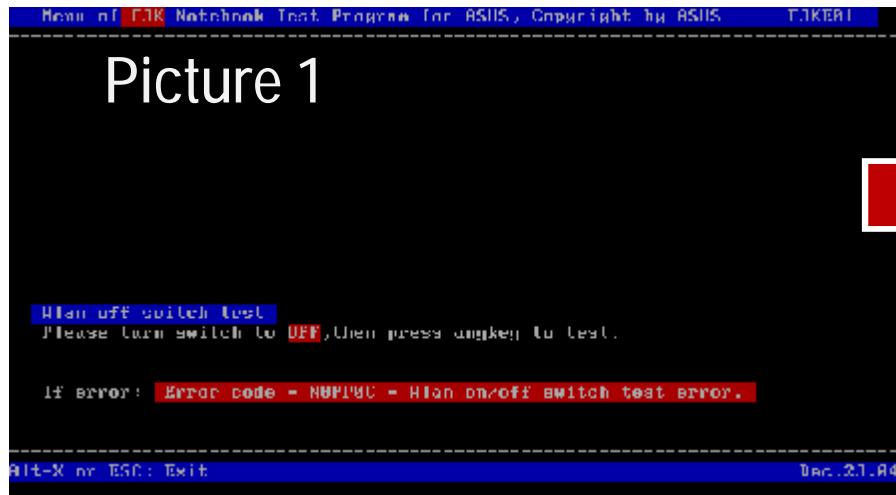
Test fail will show this PIC





WLAN OFF/ON

Please turn off/on the WLAN switch





BLUETOOTH

USB BlueTooth device check pass

10



MEMSIZE Test

The below pictures shows the information of CPU and system memory to us.

```
Build DATE:2007-03-01
ASUS          CPU Utility, Copyright by ASUS Rev2.15          Diags
=====
***** CPU Test *****
Intel(R) Core(TM)2 Duo CPU      T7500  @ 2.20GHz

Registers Test      =====  Pass
Arithmetics Test     =====  Pass
Logical Operations Test =====  Pass
String Operations Test =====  Pass
Exceptions Test     =====  Pass
CPU MMX Technology Support ===== Yes
CPU SSE Extensions Support ===== Yes
CPU SSE2 Extensions Support ===== Yes

Test CPU Function.
T.C.

11
Press any key to continue . . .
Return_Code= 0
```



MEMSIZE Test

Please confirm the memsize

```
Build DATE:2007-01-10
ASUS           Memory Utility, Copyright by ASUS Rev1.12          Diags
=====
Memory Module Information:
SODIMM0 = 2048 MB, Type:DDR2, Synchronous, Speed=667 MHz
SODIMM1 = 2048 MB, Type:DDR2, Synchronous, Speed=667 MHz
Total Memory Size = 4096 MB, Memory working speed = 667 MHz

4096 MB

Please confirm the memsize.
T.C.

Return_Code=-1
any key to continue . . .
```

12



Touchpad Test

When your finger touch the pad and move one direction, the bule sign move the same direction with your finger.

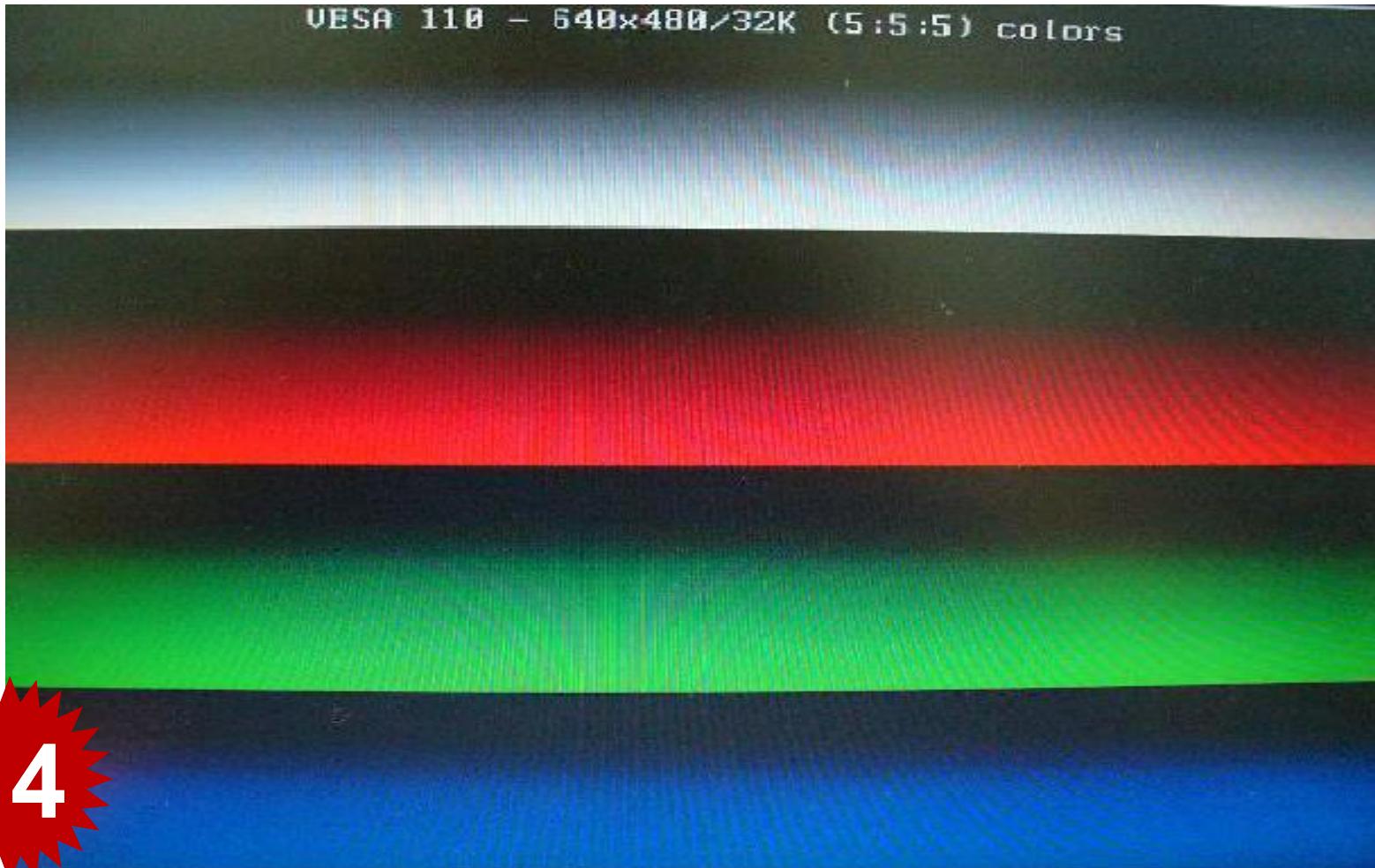


13



LCDRGB Test

If you find the vertical wave and horizontal wave between the LCD RGB Test, It has problem.



14



INSTANT Test

Press the button 1 , the grids will change color.
Please according to the words in below picture.

====Model_Name====
G70S

ML_KEY 1

ML_KEY 2

ML_KEY 3

ML_KEY 4

ML_KEY 5

Please testing by the screen indicate.

15



KEYBOARD Test

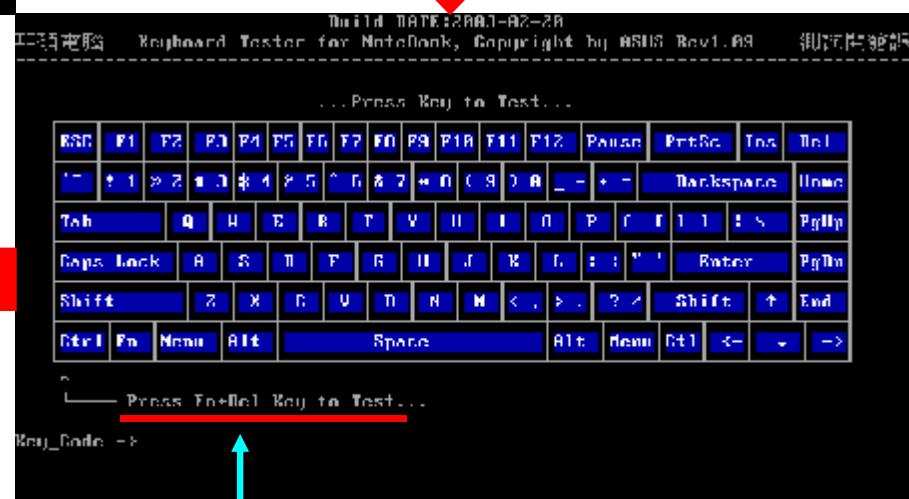
```
112Bg Keyboard Test:  
1. English Int. Keyboard  
2. Japanese Int. Keyboard  
3. Europe Int. Keyboard  
4. QUIT  
Please Enter Your Choice > 1,2,3,4
```

16

Please check the keyboard function. Press all the key at the keyboard. then the program can exit and continue.

If any key doesn't change to Blue color, it means the test program is fail.

Choose one language for the Keyboard, and then into next screen.



Press Fn + DEL key to test



Function Test

```
Build DATE:2000-05-04  
ACTRE\1.04 FuncTest.exe. Copyright by ASUS Rev1.04  
-----  
Setting Clock... OK!  
Testing DMA Controller: P82370 5 #1, P82370 5 #2, Page Register OK!  
Testing Interrupt Controller ... OK!  
Testing Protect Mode... OK!  
Testing Compress... OK!  
Testing Clock... OK!  
Testing Calendar... OK!  
  
Function Test Passed!!  
Return_Code=0
```

Test fail will show this PIC



17



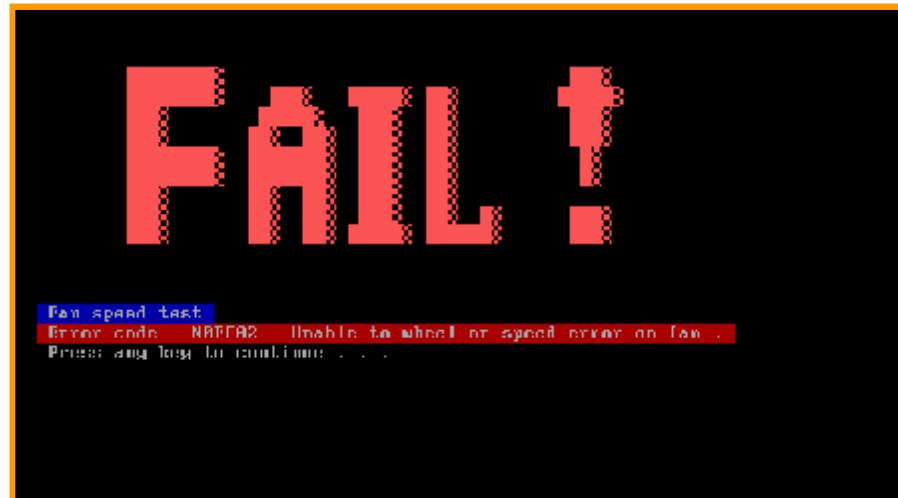
FAN OFF/ON Test

Unable to wheel or Speed Error on FAN



18

Test fail will show this PIC





CD ROM Test

```
Build DATE:1997-11-04
Compare File, Copyright by ASUS Rev1.0

... Compare Texus256.bpg & Cesus256.bpg ...
... File Compare OK ...

Press any key to continue . . .
```

19

Test fail will show this PIC





LID Switch Test

Close LID panel to test.

```
Lid switch test if function error press Z
1. Please close LCD panel,to suspend LCD.
2. Close LCD panel ,LCD backlight should be OFF.
Close LCD panel to test ...
If error: Error code = NOFK05 = LID switch test error.
```

20



BATTERY CAPACITY Test

Check the battery capacity.



Test fail will show this PIC

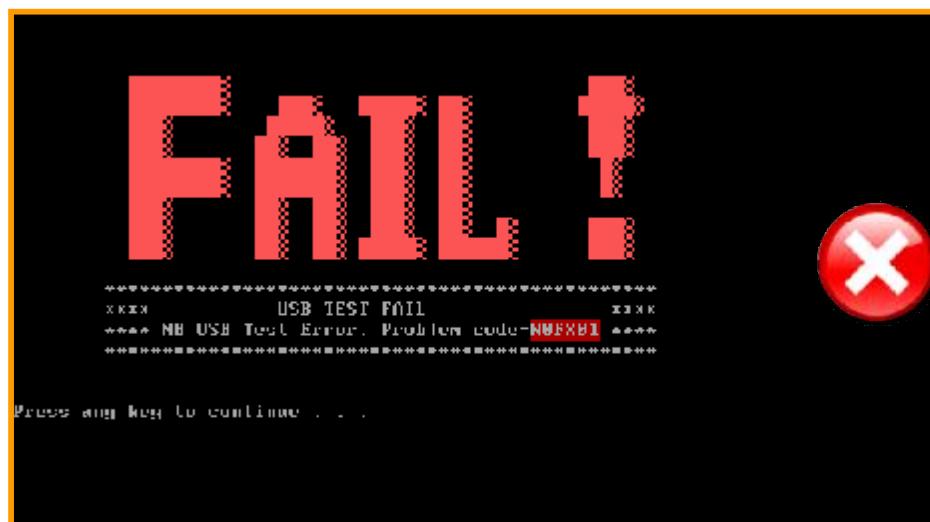




USB Test

SI_Ind		Build DATE:2007-03-09										20G704			
ASUS		USB Utility. Copyright by ASUS Rev6.23										Diags			
-----EHCI UHCI-----															
Vendor	HC	HDR	PIR1	PIR2	PIR3	PIR4	PIR5	PIR6	PIR7	PIR8	PIR9	PIR10	PIR11		
INTEL	2	.	0	1	6.23085	1	0	0	0	0	.	1	4708 2025	0	OK OK
INTEL	2	.	1	1	6.23085	1	0	0	0	0	.	1	4574 2032	1	OK OK
INTEL	3	.	1	1	6.23085	1	0	0	0	0	.	1	4708 2025	0	OK OK

22



Test fail will this picture.



Chapter 8

Windows Testing Program



Install WTP

Step 1: Download **Windows Main Program** from SIP.

The screenshot shows a Windows Internet Explorer window displaying the ASUS Service Information Portal (SIP). The URL in the address bar is <http://sip.asus.com/index.aspx?ReturnUrl=...>. The page title is "ASUS NOTEBOOK". The navigation menu includes Support, Repair, Learning, Project, Survey, Document, Admin, Profile, and ITRS. The main content area shows a table for "Windows Main Program" download. A red arrow points to the "Windows Main Program" link in the table. The table has columns for Mode, File Name, Model, and Update date. The "Windows" row is highlighted with a red border. The bottom of the page contains copyright information and a "Webmaster Mail Box" link.

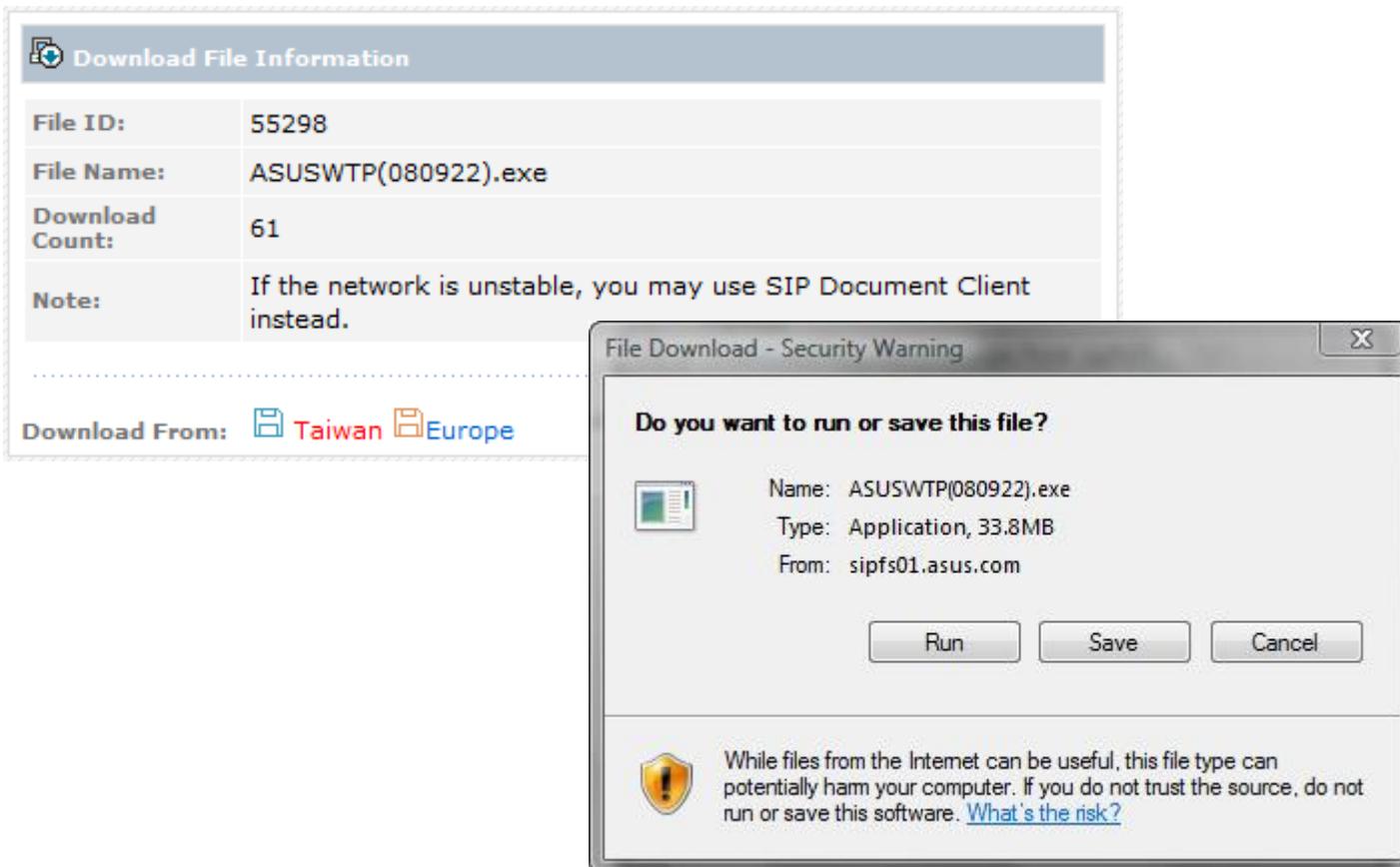
Mode	File Name	Model	Update date
FreeDOS	NBDOS_1118.GHO	182	2008.11.18
Windows	Windows Main Program		2008.9.22

Serial	Model Number	PortNumber (TS1CT)	BIOS	Test Program		TCD	S.O.P	Repair Guide (RG)	Troubleshooting Guide(TSG)		Update Date	Remark
				DOS	Windows				EN	CN		
A3	A3Ac	NFN	212	A3Ac.rar		TCD	Assemble	Repair Guide				
	A3Fp	NIF		A3Fp.rar		TCD	Test SOP	Assemble	Repair Guide			
	A3H	NFM	212	A3H.rar		TCD	Test SOP	Assemble	Repair Guide			
	A3Vp	NFK		A3Vp.rar		TCD	Test SOP	Assemble	Repair Guide			
	A3Vc	NFL	206	A3Vc.rar		TCD		Assemble	Repair Guide			
A6F	NIK	222	A6F.rar		TCD	Test SOP	Assemble	Troubleshooting Guide				



Install WTP

Step 2: Save the **ASUSWTP.exe** test program.





Install WTP

Step 3: Download the relevant **Test Program** from SIP.

ASUS® Service Information Portal
Rock Solid • Heart Touching

Support Repair Learning Project Survey Document Admin Profile ITRS

G2 G2K NPA 204 G2K.rar

G2Sg NGP G2Sg.rar

G5 G50V 206 G50V.rar G50V(W).EXE

G50Vt G50Vt.rar G50Vt(W).EXE

G50G

G7 G71V 206 G71V.rar

G70S NKT 207 G70S.rar G70S(W).RAR

G70SG 202 G70SG.RAR G70SG(W).EXE

G71G

L5 L50VN 210 L50VN.RAR L50VN(W).EXE

M51KR NN9 M51KR.RAR M51KR(W).RAR

M51Ta M51Ta.RAR M51Ta(W).RAR

M51TR 207 M51TR.RAR M51TR(W).RAR

M50SA NLT 204 M50SA.RAR M50SA(W).rar

M50VM 210 M50VM.RAR M50VM(W).EXE

M50VN M50Vn.RAR M50Vn(W).EXE

Test SOP Assemble Troubleshooting Guide

File Download - Security Warning

Do you want to run or save this file?

Name: G70SG(W).exe
Type: Application, 986KB
From: sipfs01.asus.com

Run Save Cancel

While files from the Internet can be useful, this file type can potentially harm your computer. If you do not trust the source, do not run or save this software. [What's the risk?](#)

Repair Guide

TEST SOP RG(08'10'14)

TEST SOP RG(08'10'14)

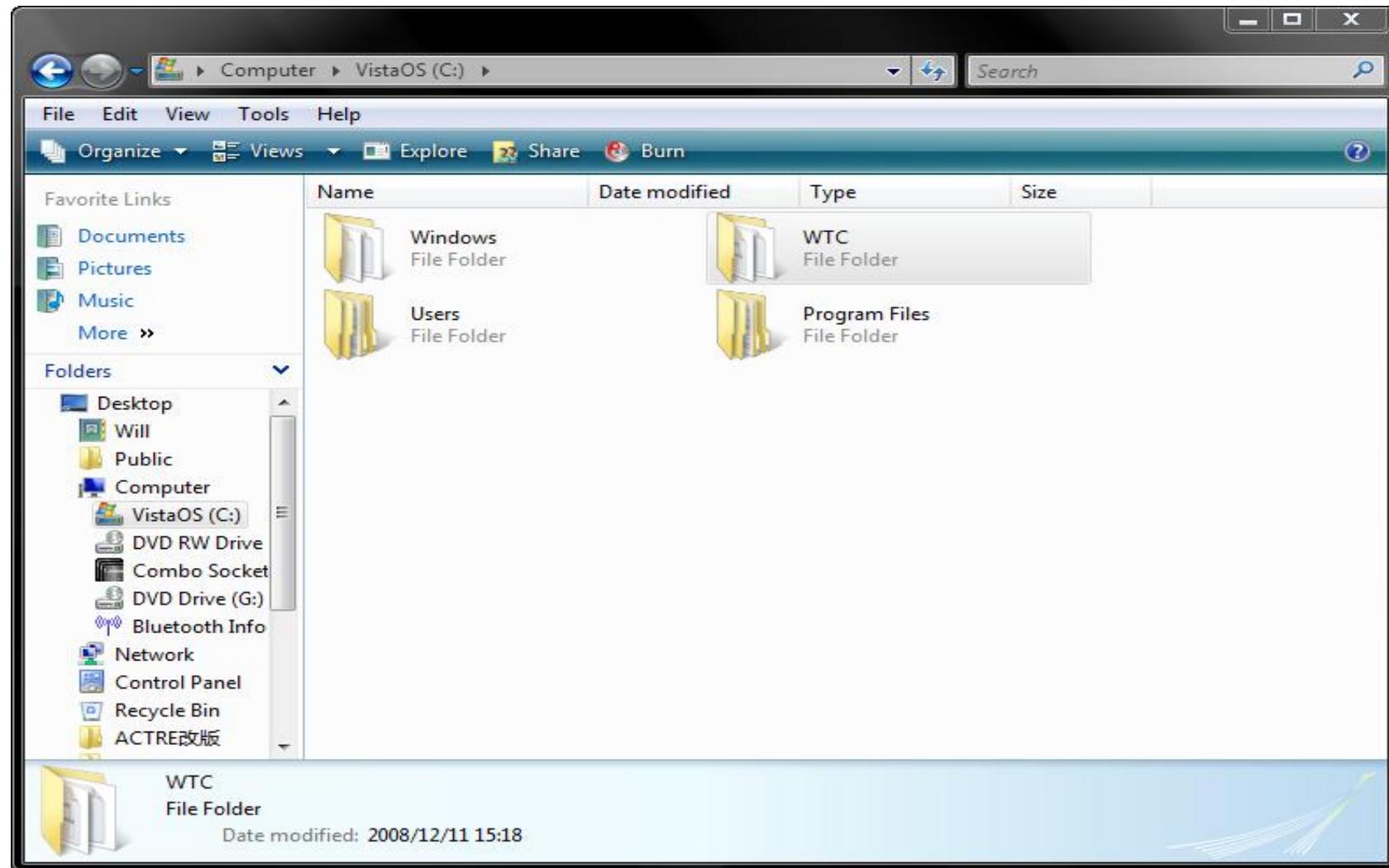
All contents are Copyright © 1992-2004 AsusTek Computer Inc. All rights reserved

Webmaster Mail box



Install WTP

Step 4: Extract the file .

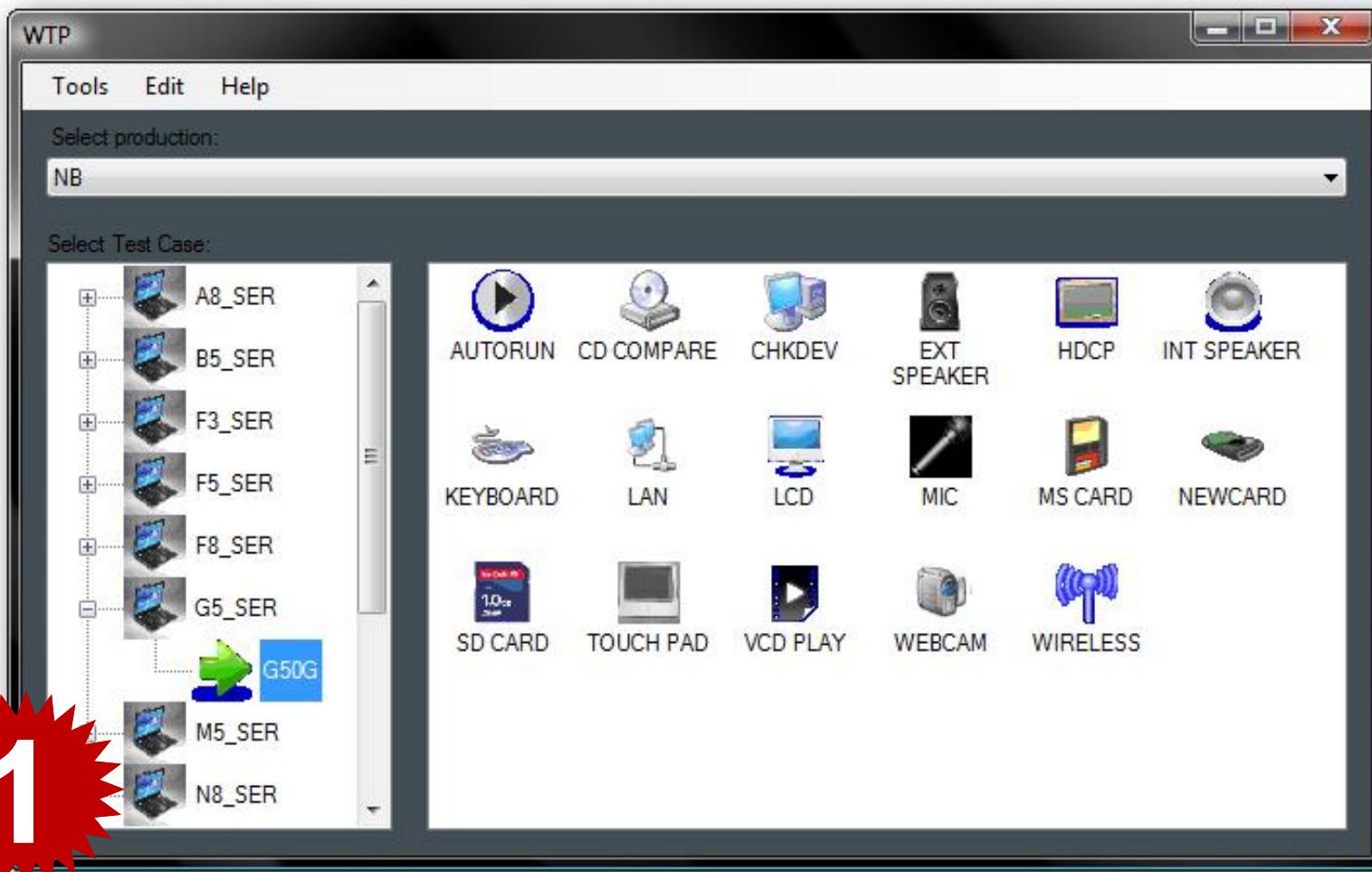




WTP Main Menu

Step 1: Run ASUSWTP.exe on desktop

Step 2: Choose Model name and running test program.



1



CHECK DEVICE

1. Check Machine all device is ok?
2. Check software and hardware is normal?



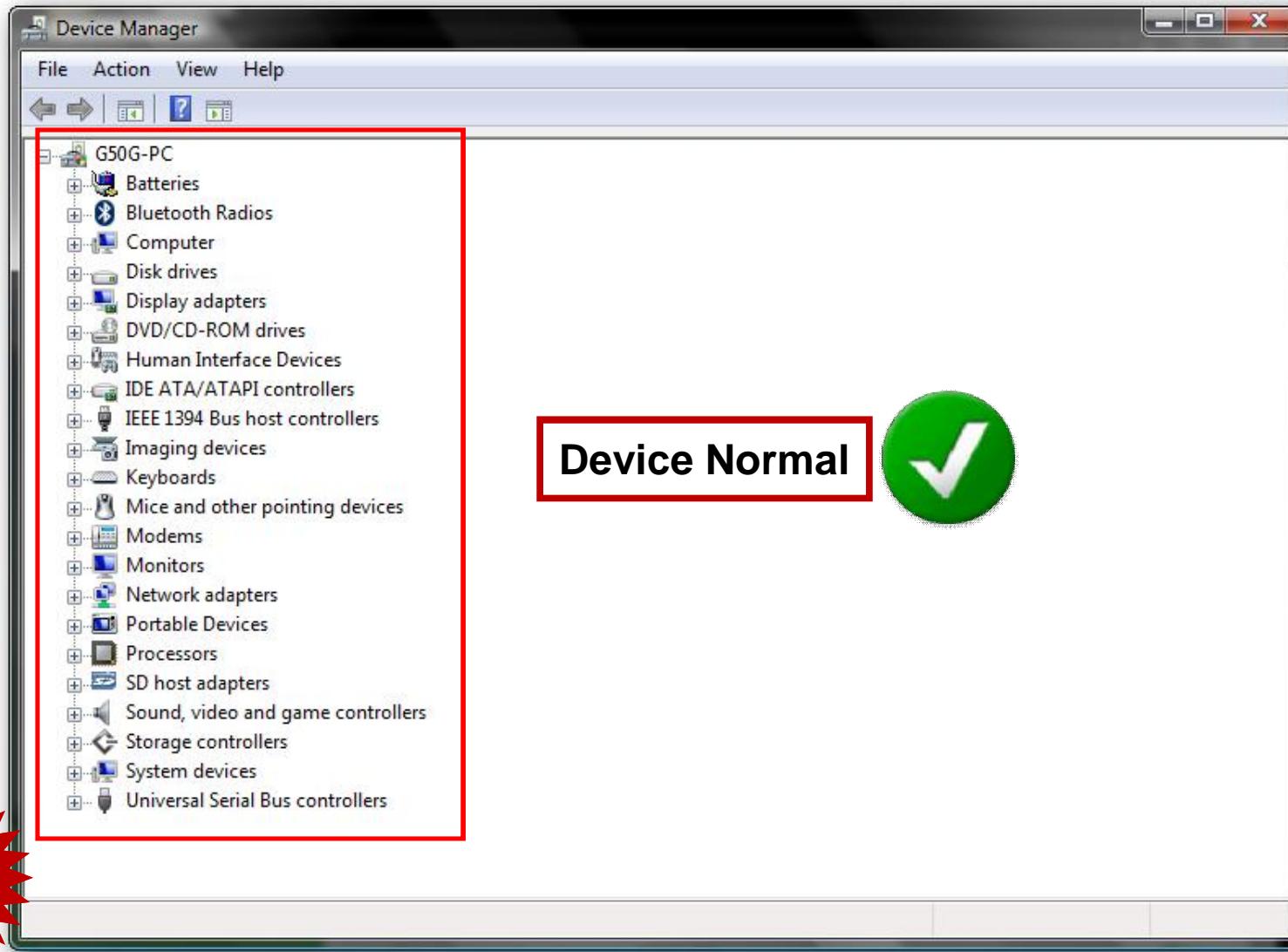
```
cmd C:\Windows\system32\cmd.exe
Build DATE: 2007-08-25
ASUS          Windows ASUS Tools, Copyright by ASUS Rev1.08      Diags
=====
Search Data = DISABLE
The Result Is :

Return_Code=255
*****CHECK DEVICE DRIVER PASS*****
Press any key to continue . . .
```

2.1



CHECK DEVICE



2.2



CHECK DEVICE

```
C:\Windows\system32\cmd.exe
Build DATE: 2007-08-25
ASUS          Windows ASUS Tools, Copyright by ASUS Rev1.08  Diags
=====
Search Data = PROBLEM

The Result Is :
Line 426 =      DEVICE HAS A PROBLEM: 43.

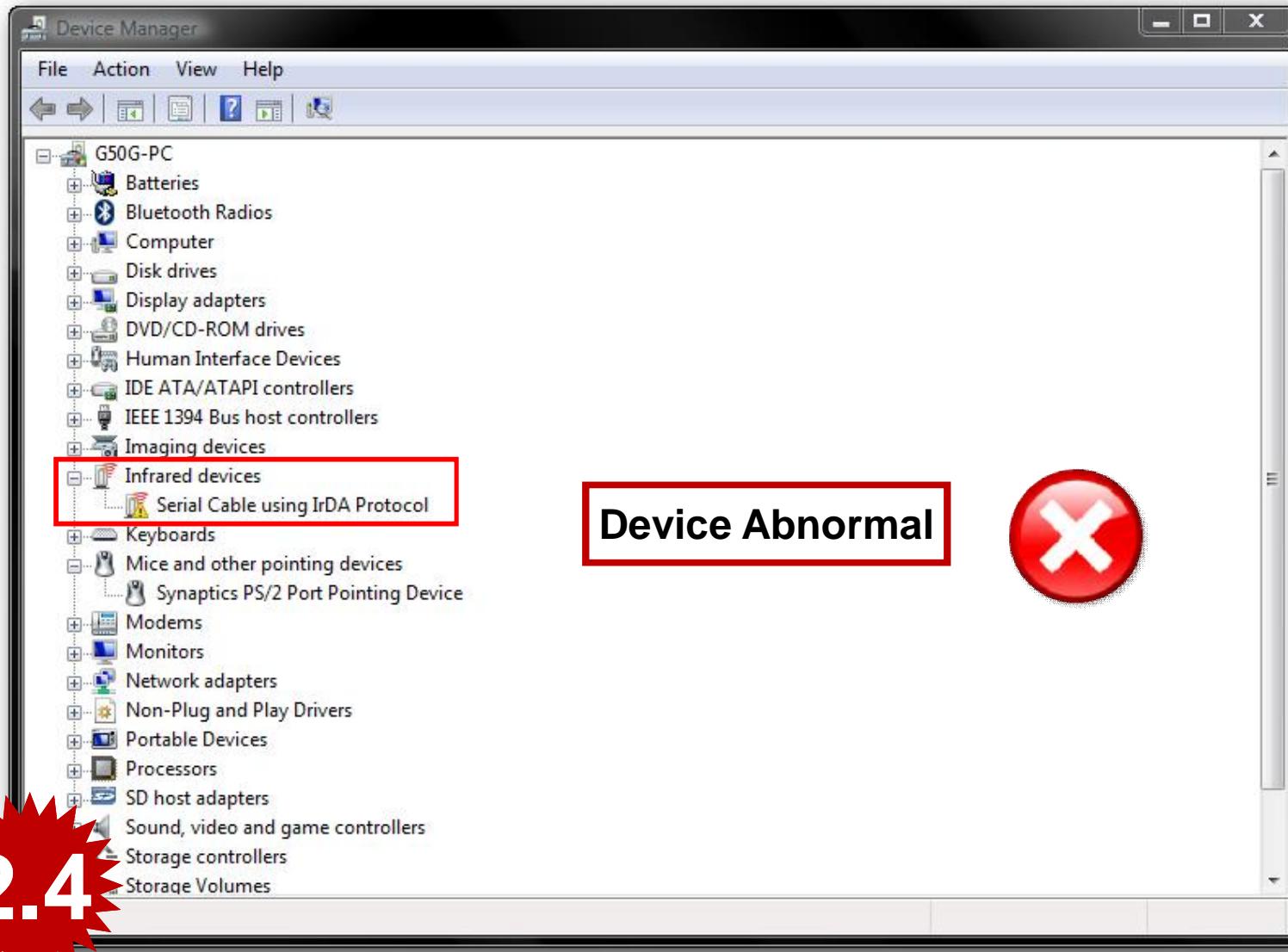
Return_Code=0
*****
*****CHECK DEVICE DRIVER FAIL*****
*****
Press any key to continue . . .


```

2.3



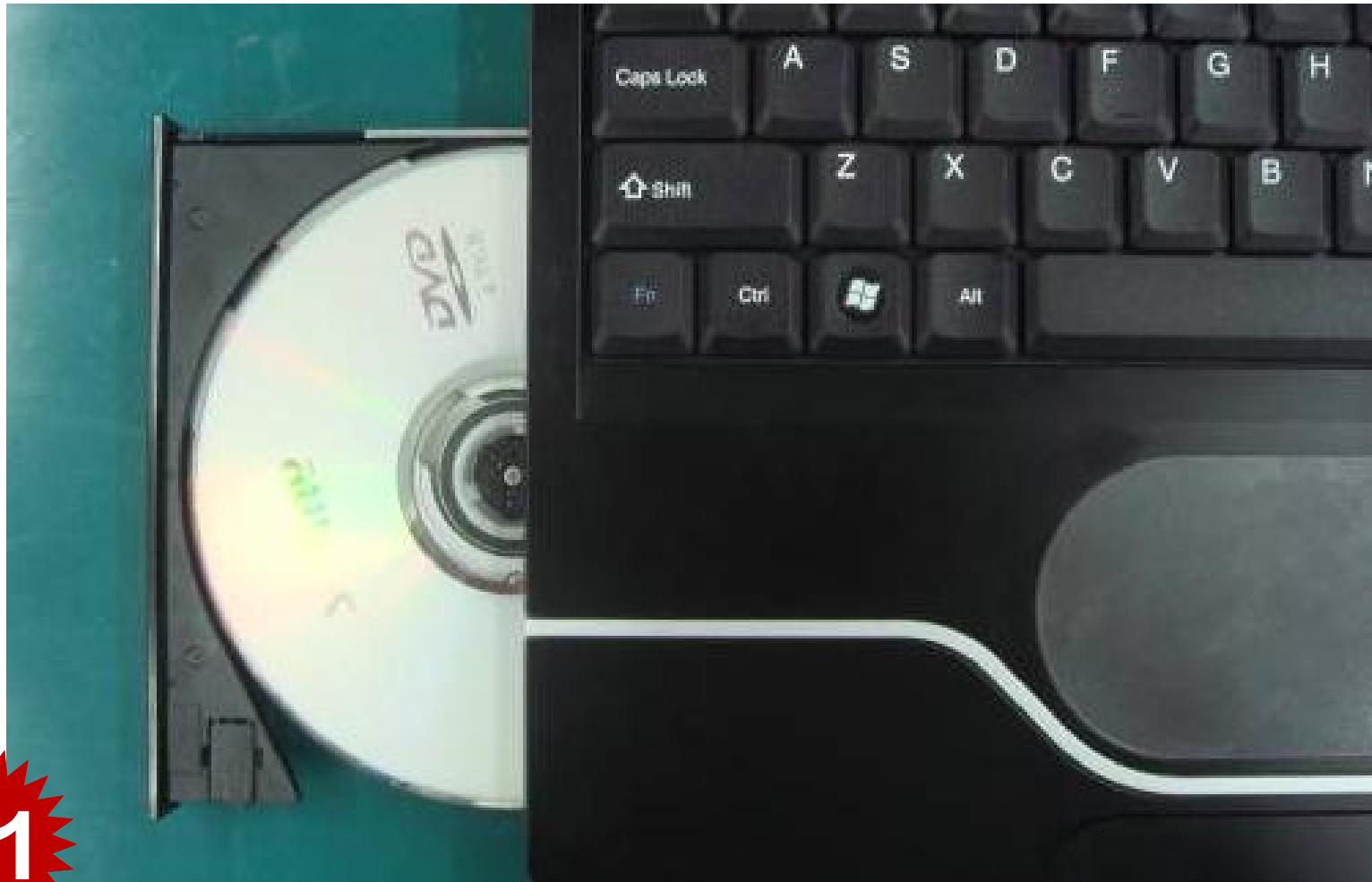
CHECK DEVICE





CD COMPARE

1. Please insert a DVD-RW disc into ODD



3.1



CD COMPARE



```
CD COMPARE test pass
```



```
FFFFFFFFFF  FF  FFFF  FF  FFFF
FFF          FF  FF  FF  FF
FFF          FF  FF  FF  FF
FFFFFFFFFF  FF  FF  FF  FF
FFF          FFFFFFFFFFFF
FFF          FF  FF  FF  FF
```

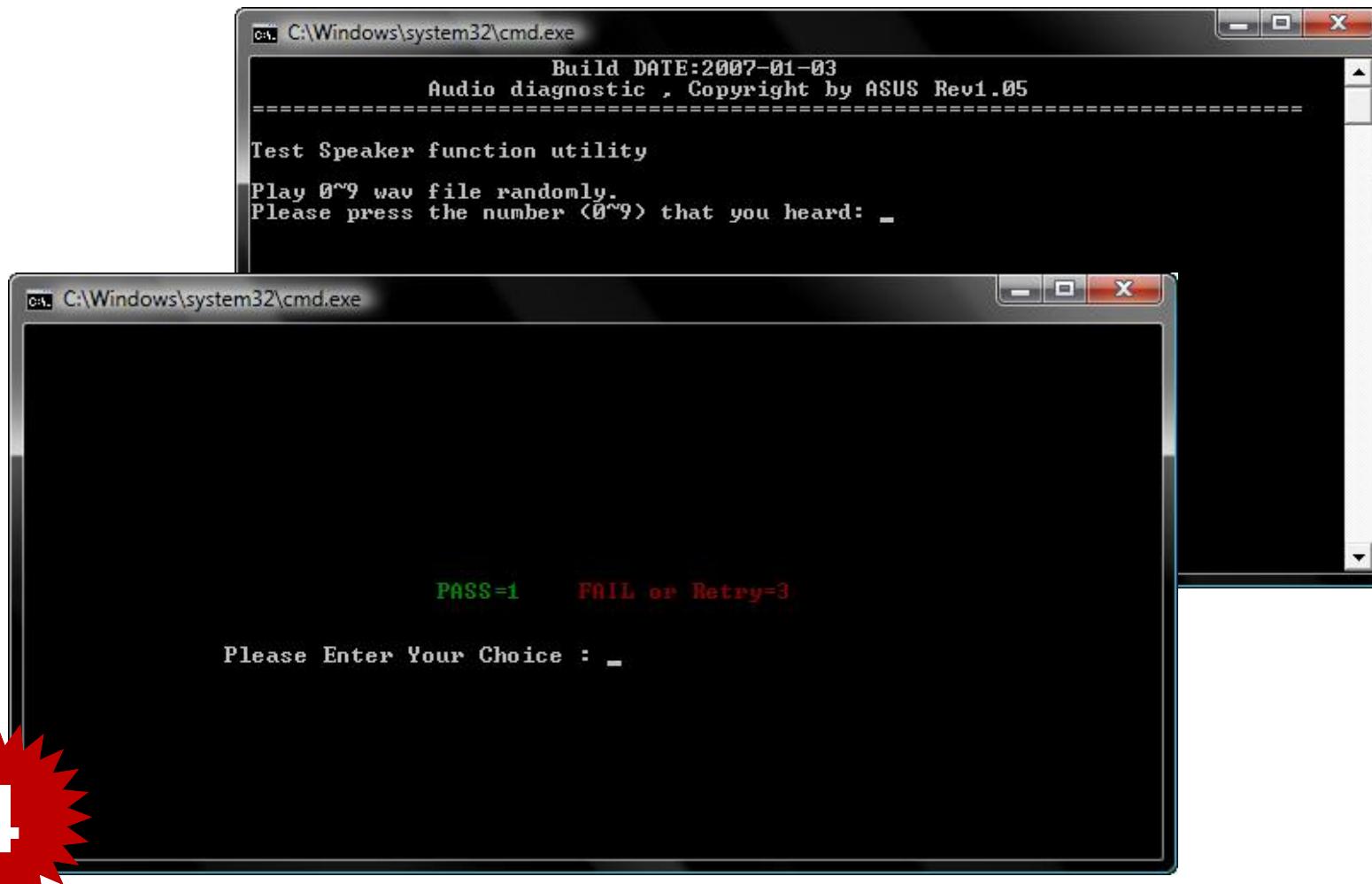
CD COMPARE test FAIL

3.2



EXT/INT SPEAKER Test

Press the number that you heard to test speaker function.





HDCP Test

Connect a monitor to notebook by a HDMI cable, the monitor must support HDCP.

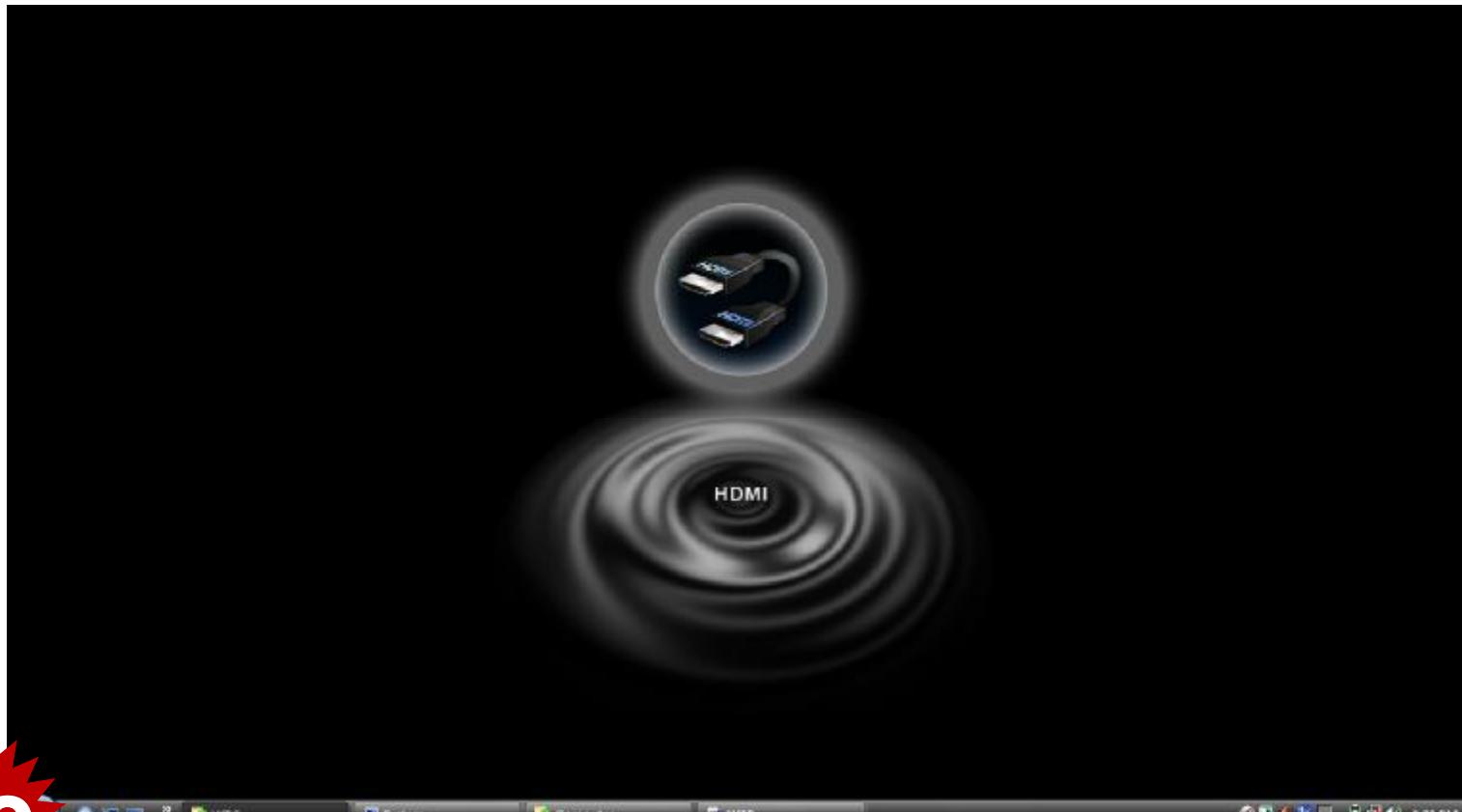


5.1



HDCP Test

Press “Fn+F8” to select the “**HDMI ONLY**” display

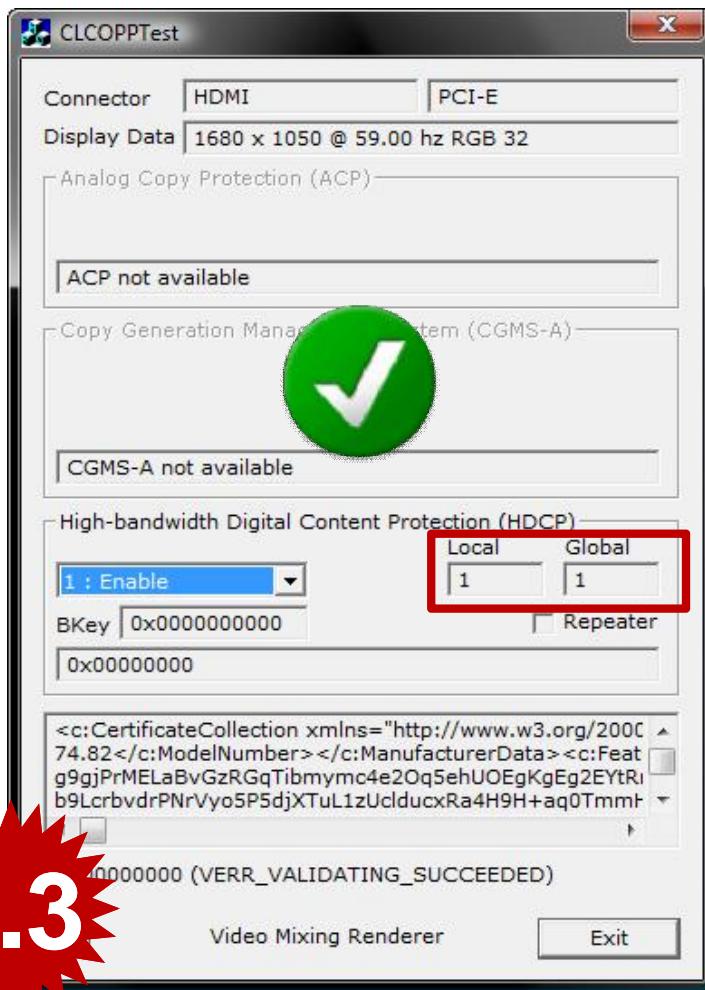


5.2



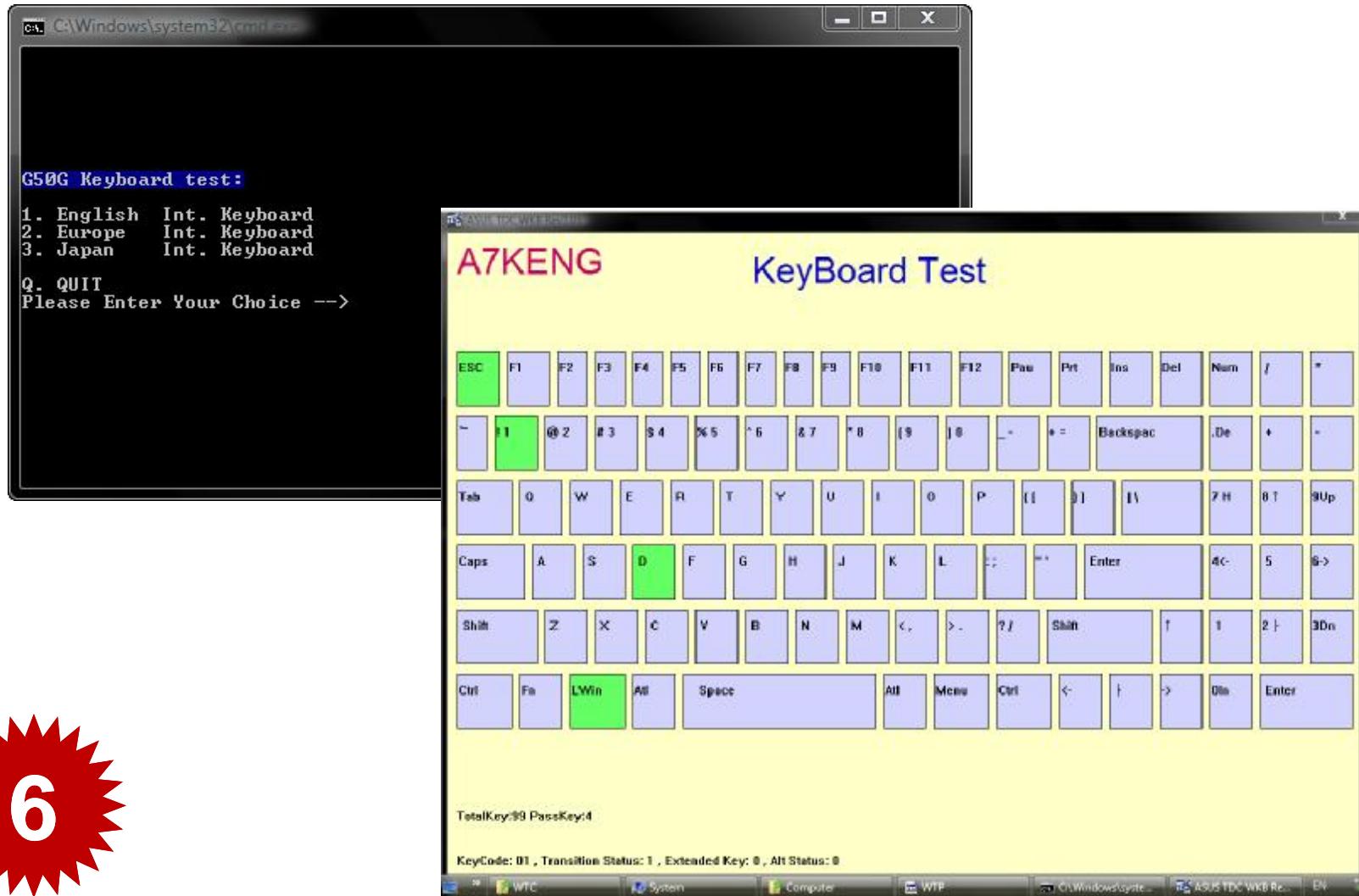
HDCP Test

- Select “1: Enable”, Local & Global changed to 1, the model’s HDCP function is normal.
- Select “1: Enable”, Local & Global doesn’t change, the model’s HDCP function is abnormal.





KEYBOARD Test

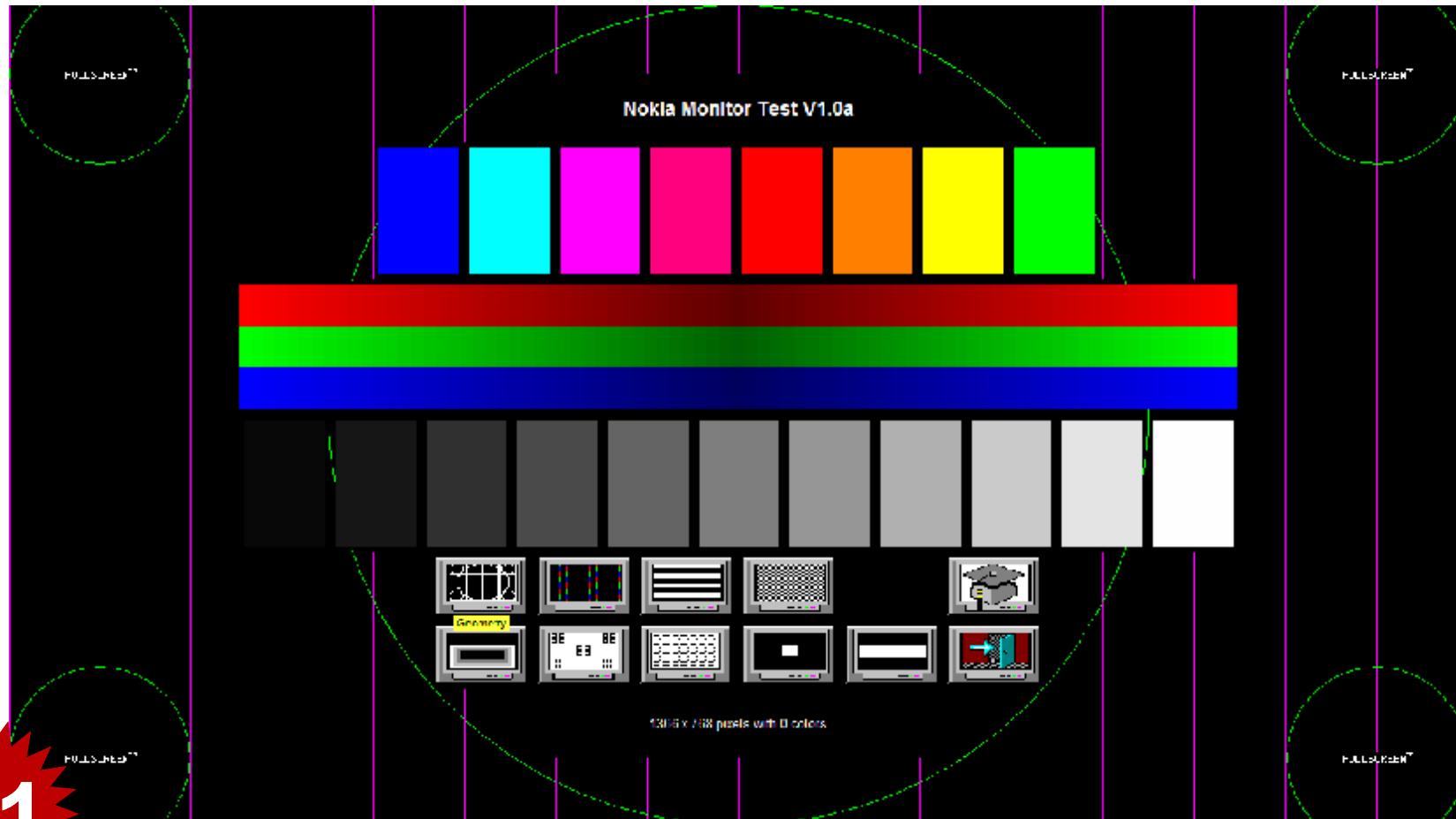


6



LCD Test

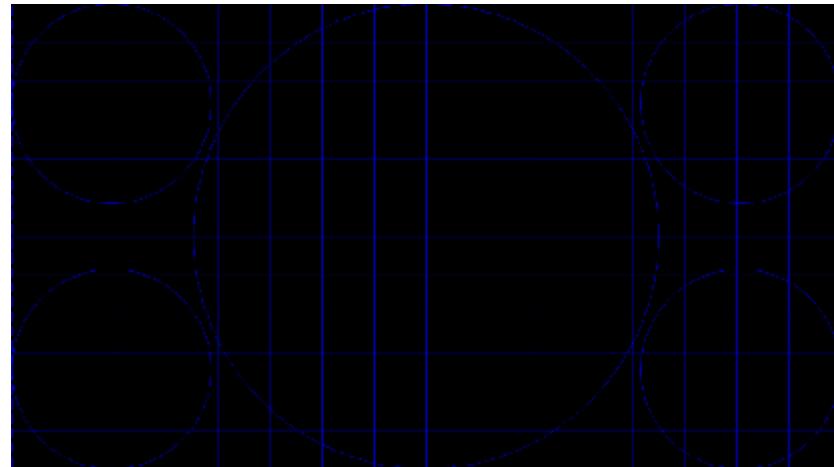
Run Nokia Monitor Test V1.0a to test.



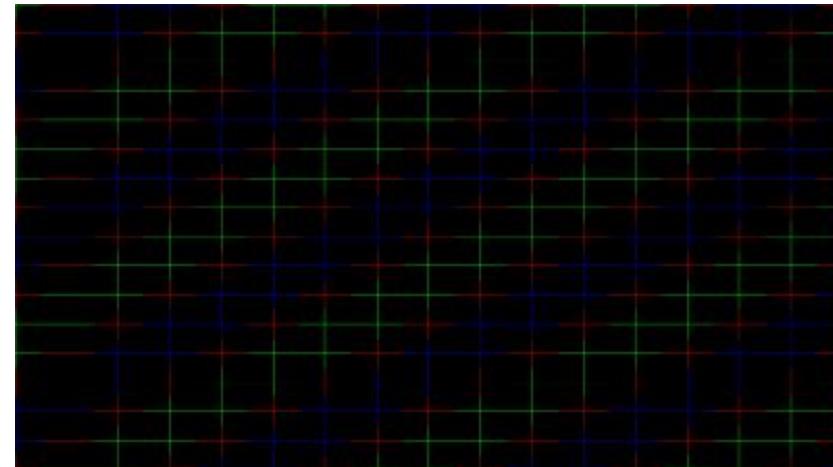
7.1



LCD Test



Geometry



Convergence



Screen Regulation

7.2



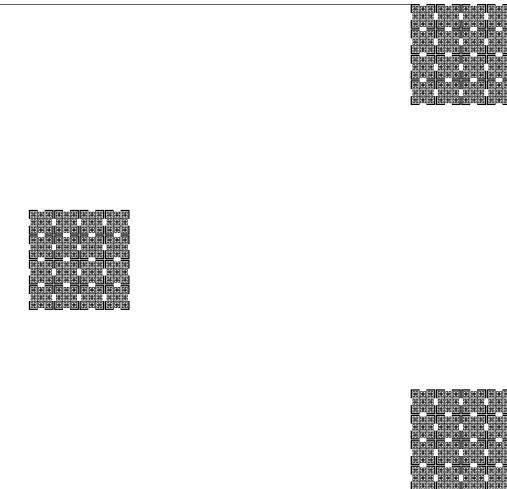
Screen Regulation



LCD Test



Colour

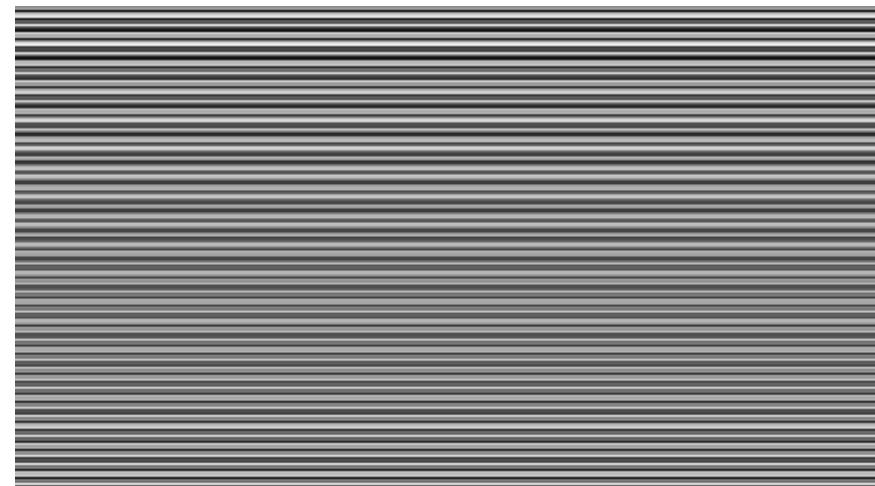


Focus



Brightness and Contrast

7.3

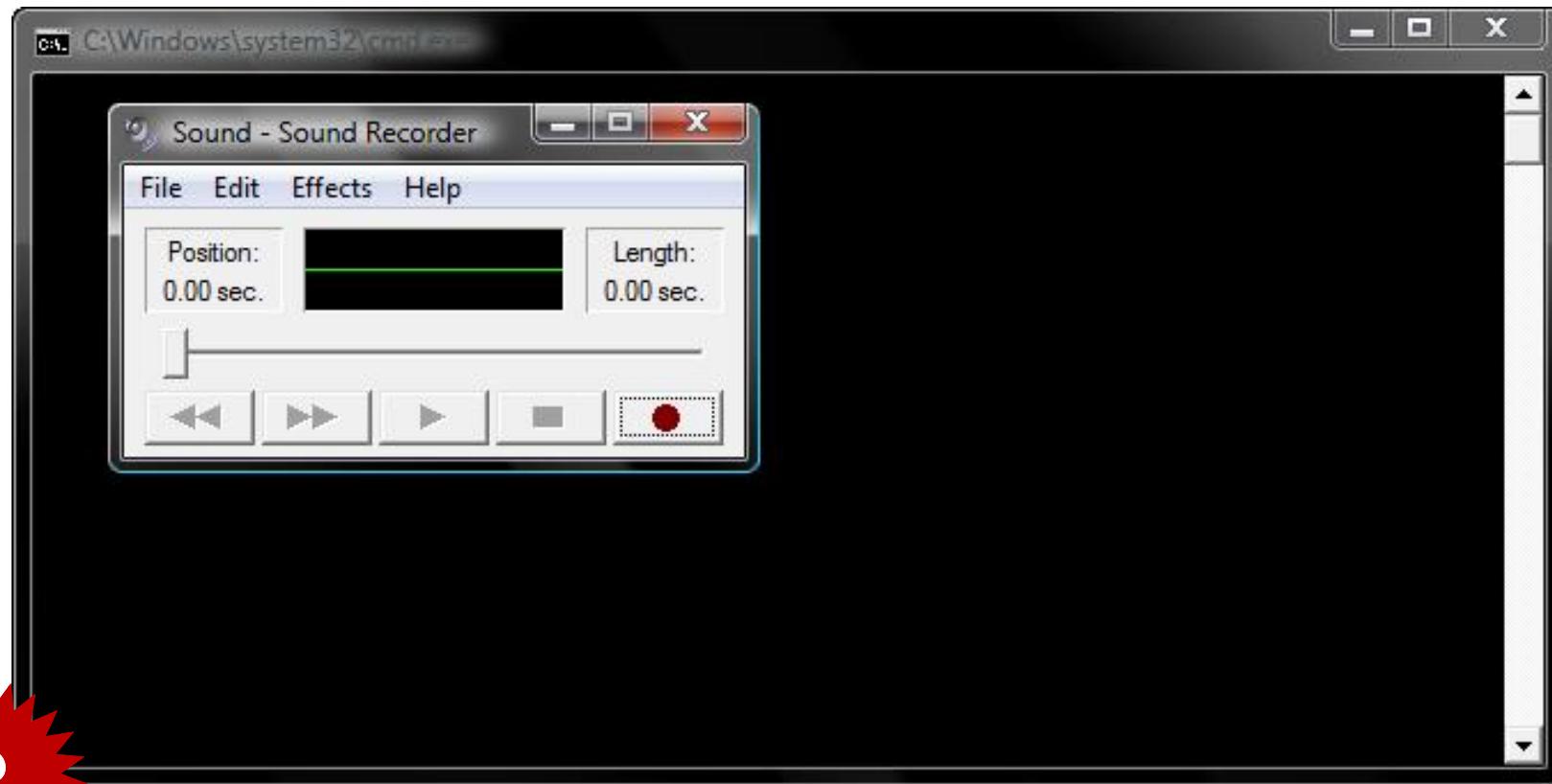


Resolution



MIC Test

▶ Insert **MICPHONE** to test.

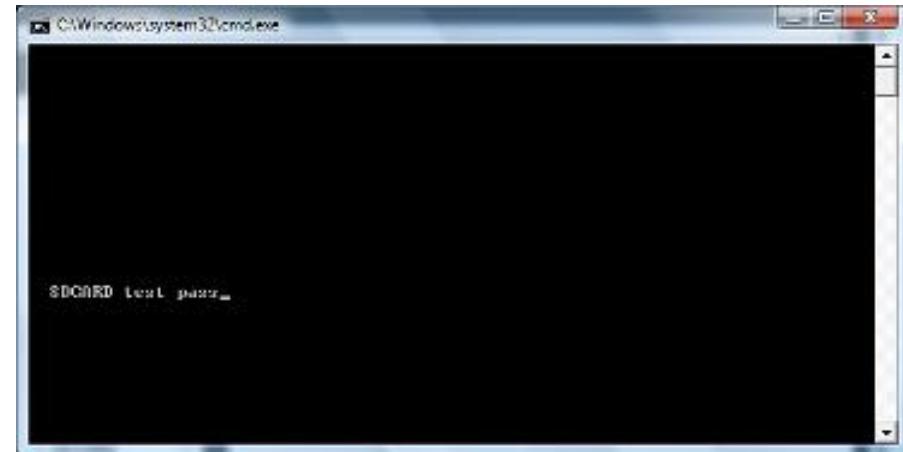
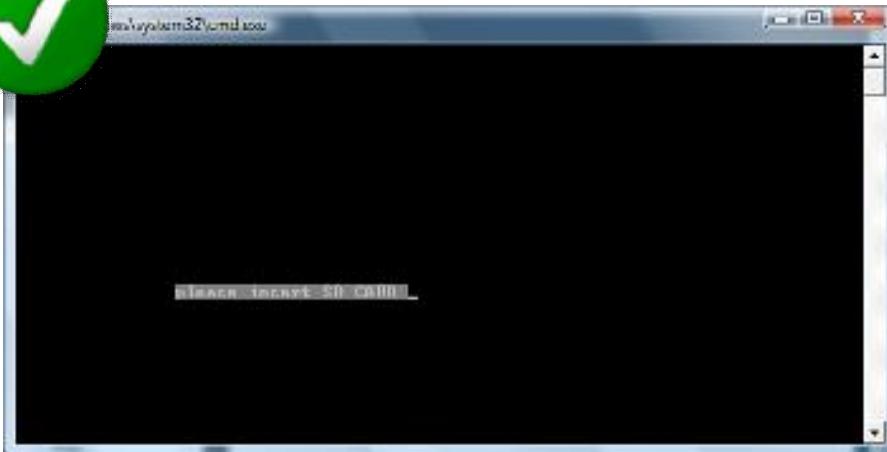


8

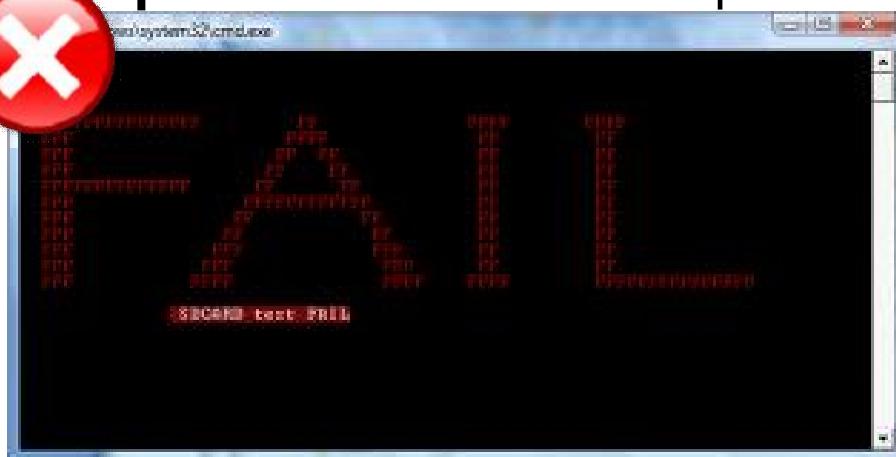


MS/SD Test

Insert the MS/SD card into Card Reader.



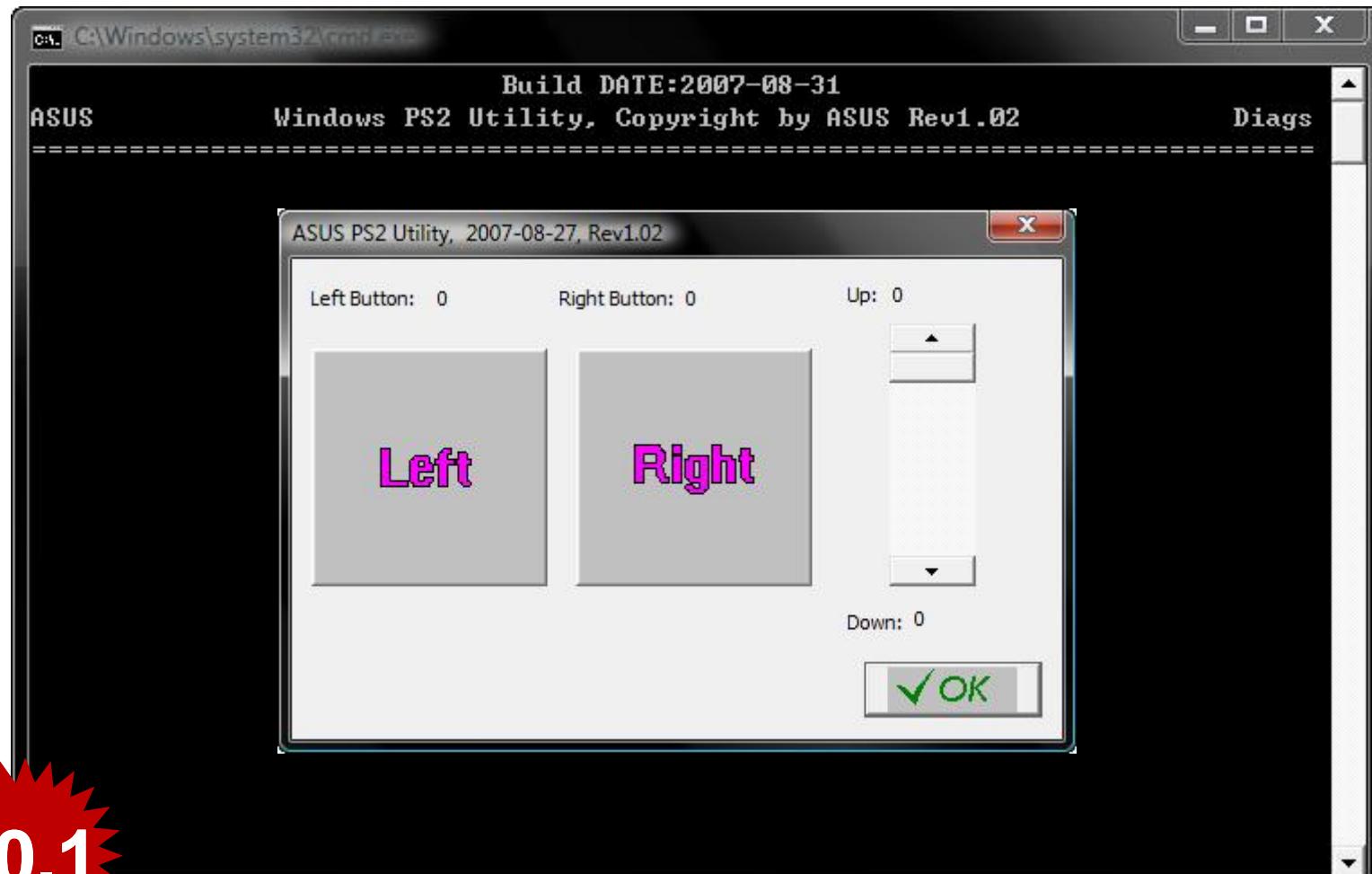
Test fail will show this picture.



9



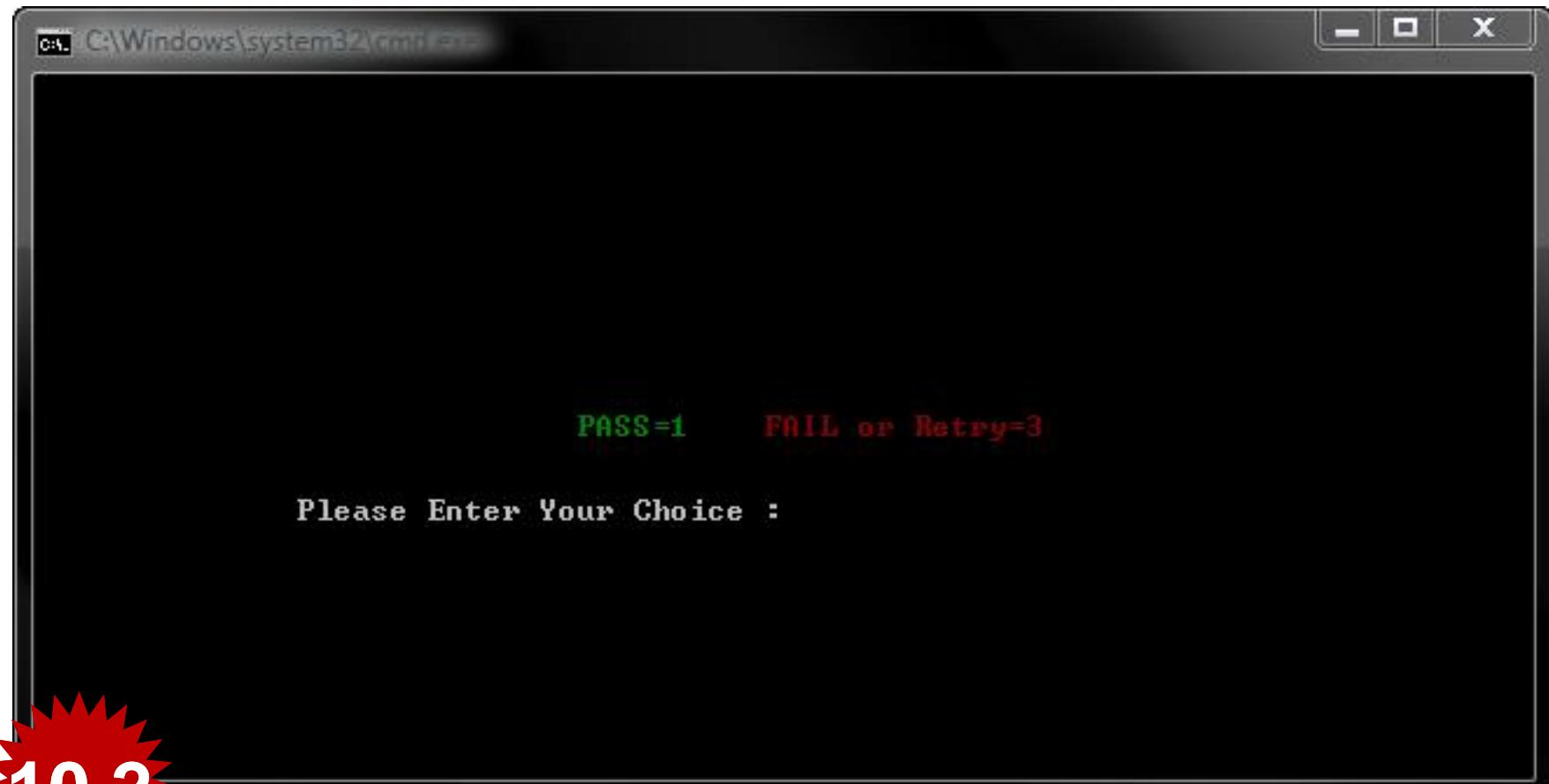
TOUCHPAD Test



10.1

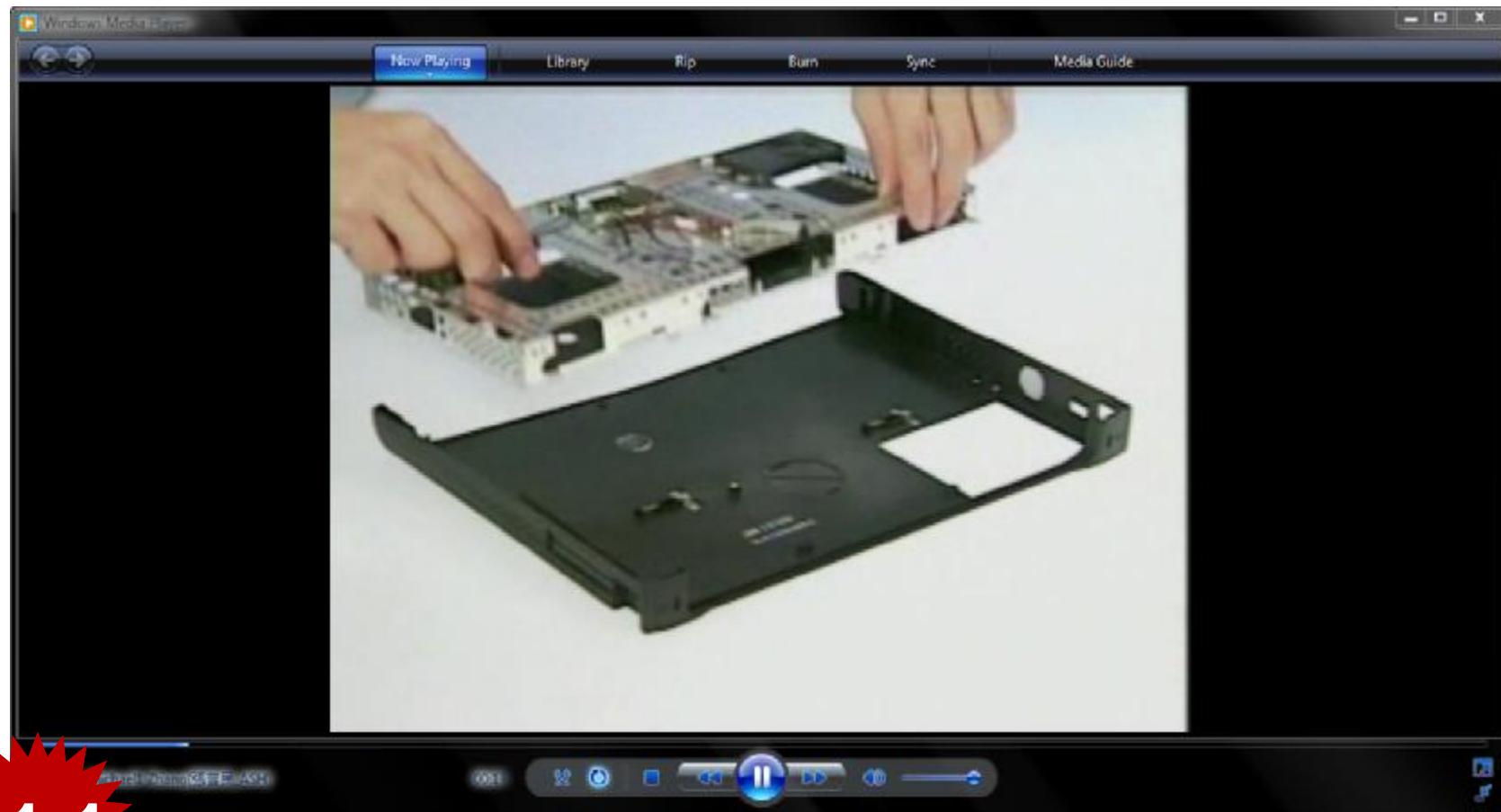


TOUCHPAD Test





VCD PLAY Test



11.1



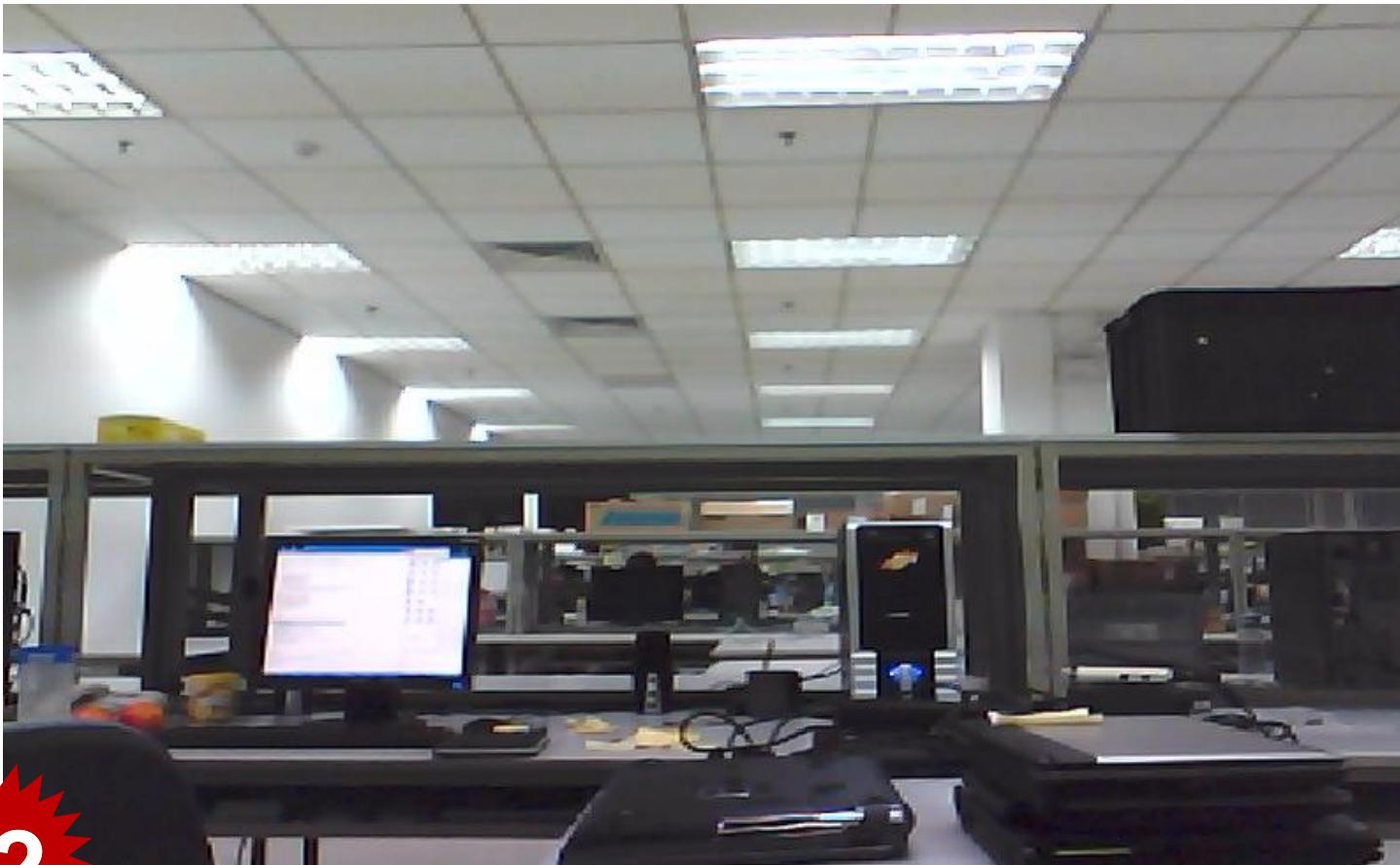
VCD PLAY Test



11.2



WEBCAM Test



12



NEWCARD Test

If the NEWCARD is normal, it will appear the below pictures.



```
Network Utility, Copyright by ASUS Rev. 8.0
Description = Marvell Yukon 88E86853 PCI-E Gigabit Ethernet Controller
Connection = (L0)XXX(0.0) 1000M 100M 10M 1000Mbps
LAN Speed = 100 Mbps
MAC Address = 88-12-BE-62-4D-08
Connect = Connected
Return_Code = 0
```



TEST fail will show this PIC.

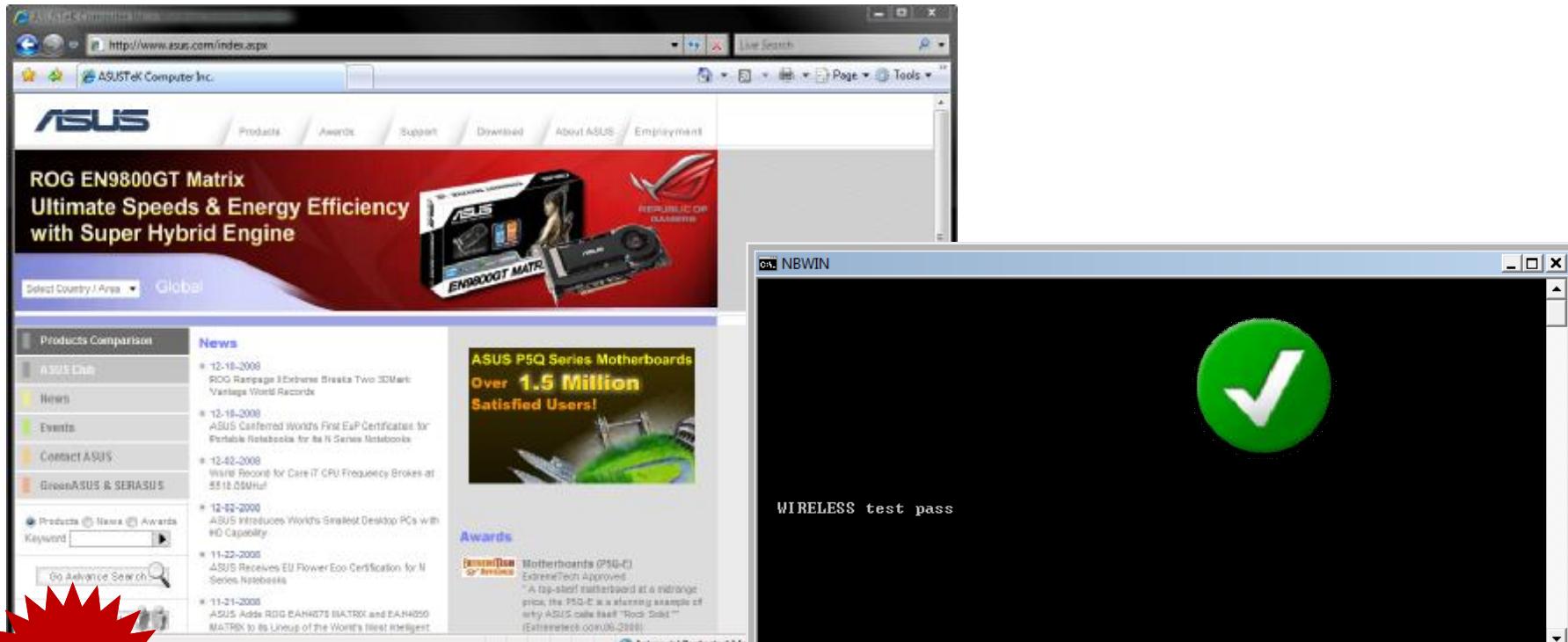
```
NEWCARD test FAIL
```

13



WIRELESS Test

If the wireless is normal, it will appear the below pictures.



14.1



WIRELESS Test

¶ Test fail will show the following pictures.

